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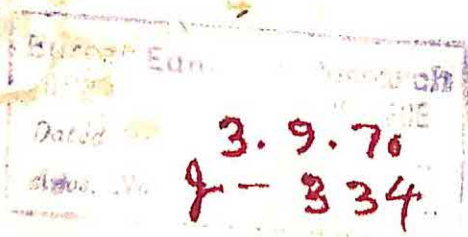


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ARAB STUDENTS' CHOICES OF WAYS TO LIVE*

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E. TERRY PROTHRO

A. PROBLEM

Morris (2, 3) has developed descriptions of patterns of living drawn from conceptions of the desirable life found in the world's leading religious and ethical systems. He has used the ratings given by students to these "ways of life" to make cross-national studies of the values of male students from the United States, Canada, China, India, Japan, and Norway. He and Jones (4) have shown that dimensions of "conceptions of the desirable" could be obtained by factor analysis of those ratings, and that the dimensions so obtained were quite similar for American and Indian students.

In this paper the choices of Arab students have been compared with those of students from other countries, and a factor analysis has been carried out to determine whether the dimensions of Arabs' value expressions resembled those of other students.

B. SUBJECTS AND PROCEDURE

Students in this university were given the "Ways to Live" document in the form used by Morris, and asked to rate each of the ways on a seven-point scale. A rating of 1 indicated "I dislike it very much," a rating of 4 indicated "I am indifferent to it" and a rating of 7 indicated "I like it very much." Instructions for the rating procedure were those of Morris and Jones (4).

Data were obtained from 100 Near Eastern Arab males. Of these, 60 were Christians and 40 were Moslems. Median age at last birthday was 20.8. There were 49 subjects from Lebanon, 22 from Jordan, 20 from Syria, and nine from Bahrain, Egypt, Saudi Arabia, Sudan, and Iraq.

C. RESULTS

For each of the ways, the ratings assigned by Christians were compared with those assigned by Moslems. The chi-squared technique was used to determine whether there were differences in the ratings given by the two

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groups which could not be attributed to chance. For none of the ways was there a difference between the two distributions which was significant at the .01 level. For only one of the 13 ways (number five) was there a difference significant at the .05 level. Because of the absence of statistically significant differences between the two groups, religious affiliation was not considered in subsequent analyses of the data.

Mean assigned weights were computed for each of the ways. The more preferred ways, and mean weights assigned were:

- Way 6, "need of constant activity" (5.7).
- Way 5, "merge oneself with a social group, enjoy . . . companionship" (5.5).
- Way 7, "dynamic integration of enjoyment, action, and contemplation" (5.4).
- Way 1, "moderation . . . restraint and intelligence" (5.3).
- Way 10, "stern, manly control of self" (5.1).
- Way 3, "concern for other persons" (5.0).

The less preferred ways, together with mean weights assigned, were:

- Way 9, "quiet receptivity" (3.0).
- Way 11, "contemplative life . . . giving up the world" (3.1).
- Way 8, "simple, carefree, wholesome enjoyment" (3.4).
- Way 2, "go it alone" (3.4).

The mean weights assigned these ways by Arab students were then compared with the mean weights assigned by male university students in six other countries. The Arab students gave a higher mean weight to three of the ways than did any other country. For each of these ways, the Chinese students gave the second highest rating. The three ways which Arabs rated higher than did others were:

- Way 6, "need of constant activity" (5.7).
- Way 5, "merge oneself with a social group, enjoy . . . companionship" (5.5).
- Way 12, "life finds its zest in overcoming, dominating, conquering . . ." (4.8).

The Arabs rated two other ways higher than five of the six other nations:

- Way 10, "stern, manly control of self" (Arabs, 5.1; Indians, 5.3).
- Way 13, "let himself be used . . . by the great objective purposes in the universe" (Chinese, 5.5; Arabs, 4.0).

The Arabs gave the lowest average rating to one of the ways:

- Way 8, "simple, carefree, wholesome enjoyment" (3.4).

A factor analysis was made of the ratings assigned. Thurstone's centroid method was employed with graphical rotation toward simple structure. This

was the technique employed by Morris and Jones. Data obtained from this analysis are shown in Table 1.

TABLE 1
LOADINGS ON ROTATED FACTORS*

Ways	F'' ₁	F'' ₂	F'' ₃	F'' ₄	F'' ₅	h ²
1	20	—09	34	05	—02	17
2	46	—27	—19	—05	—13	34
3	31	24	20	02	—03	20
4	—12	—56	11	—11	19	39
5	00	05	09	31	—10	12
6	—08	—15	00	11	—19	08
7	05	—38	01	04	49	39
8	—07	—40	47	00	00	39
9	24	—33	—08	—23	—25	29
10	66	—02	—04	12	20	49
11	37	02	30	—44	—13	44
12	16	—50	—07	38	—05	43
13	25	31	46	07	—13	39

*Decimal point omitted for all entries.

Some of the dimensions which emerge from the factor analysis seem to be more or less the same as those found by Morris and Jones, but some are definitely not the same. Factor I might be called a *Self-Reliance* factor. The heaviest loadings were for ways endorsing "manly self-control," "go it alone," and "the inner self." This factor is similar to the *Social Restraint and Self-Control* factor of Jones and Morris, although it differs in that Way 2 and Way 11 have for our groups much higher loadings than for his groups.

Factor II can be named an *Enjoyment* factor, because the heavy loadings on this factor were for ways offering that "life is something to be enjoyed—sensuously," "zest in overcoming, dominating, conquering," and "simple, carefree, wholesome enjoyment." This factor resembles fairly closely the *Self-Indulgence* factor of the American and Indian analyses.

Factor III is one of *Simplicity and Moderation*. Heavy loadings were found for ways advocating "simple, carefree, wholesome enjoyment"; "let himself be used . . . by the great objective purposes in the universe"; "moderation . . . restraint and intelligence"; and "contemplative life . . . giving up the world." The ways with loadings on this factor call up pictures of Thoreau's Walden Pond. There was no factor in the Jones and Morris studies which could be looked upon as analogous to our Factor III.

The familiar *Introversion-Extraversion* dimension seems to be found in Factor IV. The heaviest positive weights go to ways asserting that "life finds its zest in overcoming, dominating, conquering some obstacle" and "a person should . . . merge oneself with a social group, enjoy coöperation and

companionship." The heaviest negative weight on this factor is Way 11, which describes "contemplative life . . . giving up the world." The three ways with heaviest loadings on our analysis were also the three with heaviest loadings in the American and Indian analyses, where this factor was called *Enjoyment in Action*.

Way 7 is the only way with a heavy loading on the fifth factor, so this factor can be termed one of *Dynamic Integration*. Way 9, "quiet receptivity," has some negative loading. There was no factor in the prototype study which corresponds to this one. Indeed, Way 7 had no large loading on any of the factors found by Jones and Morris.

D. DISCUSSION

This study did not deal directly with the values which control the daily behavior of Arabs. Rather, it attempted to ascertain the degree of acceptance and rejection which Arabs express with respect to 13 major "philosophies of life." The study deals with judgments of the desirable rather than with general behavior.

In general the Arab students seem to prefer ways of life which involve activity, group participation, and self-control. They reject ways which center on receptivity, contemplation, carefree enjoyment, and solitary living. The picture which emerges, then, seems to be one of active extraversion coupled with a moderating self-restraint.

When Arab choices are compared with those of other countries, we again notice the unusually strong emphasis on activity, group participation, and self-control. Rejection of carefree enjoyment, which also stands out, fits into this picture. The only additional item which is notable from the normative data is the acceptance by the Arabs of the ideal of permitting themselves to be used by cosmic forces. Acceptance of this item seems to be compatible with the classical interpretation of "Islam" as meaning submission to fate.

There is a striking similarity between the choices made by our subjects and those which Adorno, *et al.* (1) attribute to "the authoritarian personality" in America. The emphasis on activity, group participation, and self-control and the rejection of carefree enjoyment, contemplation, and solitary living are all a part of the "authoritarian syndrome." Similarly, submission to fate fits the picture. It should be noted that a study by Prothro and Melikian (5) presented evidence justifying the use of the term "authoritarian" in describing the culture of this area. This "syndrome" not surprisingly manifests itself in value choices.

Although there are distinctive features of the Arab choices, the rankings given the various ways by Arabs students were generally similar to the rankings given those ways by other students. The rank-order correlation (ρ) between Arab students' rankings and the rankings of other students were all positive: India, 0.79; China, 0.75; Japan, 0.74; United States, 0.69; Norway, 0.66; Canada, 0.57. As Jones and Morris point out, there is a general tendency for students to prefer some ways and to reject others. National differences are variations within this general pattern of value choices.

The data do not permit an affirmative answer to the question of whether there is a "value structure holding across cultures." Three of the dimensions found in this study were about the same as those found in America and in India, but the other two factors found had not emerged previously. Similarly, two of the factors found in the previous study were not found in this one.

E. SUMMARY

Male Arab students were asked to rate the 13 "Ways to Live" described by Morris as summarizing the conceptions of the desirable found in the world's leading ethical and religious systems. The ratings of the Arabs were compared with the ratings of students from seven other countries. Arab students gave greatest preference to ways involving activity, group participation, and self-control. They rejected ways which centered on contemplation, solitary living, and carefree enjoyment. Similarities were noted between the choices of Arabs and those which might typify "the authoritarian personality."

A factor analysis of the ratings yielded five orthogonal dimensions. Three of these dimensions resembled those found in studies of American and Indian students, but two of the dimensions were different from those found in studies elsewhere.

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THE INTELLECTUAL FUNCTIONING OF DELINQUENTS*

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A. BACKGROUND

Lower scores on intelligence tests of delinquents have been explained in various ways. According to Williams (12), the lower scores of delinquents are due to their inability to profit from experience, that is, to learn intelligently. Possibly, their short attention span is related to impulsiveness and restless activity both of which serve to reduce intelligent behavior (5). Difficulty in planning ability together with impulsiveness could make careful, considered behavior difficult for the delinquent (6).

Many researchers (2, 5, 7, 8, 10) have found that delinquents do better on motor tasks than on verbal tasks. Rapaport (7) believes that this is due to characteristic emphasis on action or "doing things" and the avoidance of rational application to problems. The delinquent prefers to act immediately rather than to think carefully and verbalize. The over-all pattern is one involving un-reflective thinking, poor judgment, faulty planning ability, and impulsive activity—in short, what may be called an action-oriented proclivity.

Shafer (8) states that for psychopathic and delinquent personalities the characteristic pattern on the Wechsler-Bellevue is the superiority of the performance level over the verbal and high scores on subtests that involve visual-motor coordination and speed. On the Picture Arrangement and Object Assembly subtests, they achieve their best scores as compared to the other subtests. Both perceptual-organizational and motor processes are involved in these subtests (7, 10). The relative superiority of the delinquents' performance on these tasks may be due to the motor factors primarily and not to the perceptual-organizational factors. Possibly, on a test of perceptual-organizational ability, with verbal and motor factors held minimal, delinquents might do poorer than non-delinquents because of a lack of careful, planned orientation towards tasks.

B. PURPOSE

The purpose of this study will be to determine whether there is the characteristic pattern for delinquents on the Wechsler-Bellevue and to determine how these subjects fare on a relatively non-verbal, non-motor task.

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C. PROCEDURE

An Assembly Method (*AM*) was designed to measure objectively perceptual and organizational processes relevant to intellectual functioning. It was designed to present a situation where verbal, motor, speed, cultural, and abstract features would be minimal (3, 4).

AM consisted of multiple-choice visual discriminations. The subjects assembled a male figure from among original pieces and alternates of subtle, moderate, and gross distortion but all of interchangeable fit. A practice figure was first demonstrated in pantomime and then 11 sets of four pieces each were

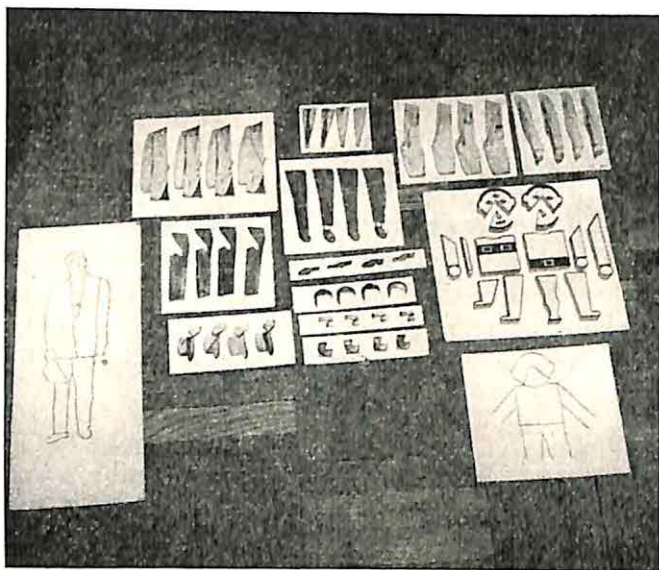


FIGURE 1
ADMINISTRATION OF ASSEMBLY METHOD

presented in prescribed order (see Figure 1). Subjects indicated their choice by touching a piece in some way. No verbal or motor responses were elicited and there was no time limit. Perceptual processes were defined as immediate and progressive discriminations of the various body parts, one from another and from alternate pieces of the same part. Organizational processes were the combining of these percepts into larger units as well as the correction of these percepts.

In December of 1954, 12, 14, and 16-year-old male students in a junior and a senior New York City high school were administered the Wechsler-Bellevue Adult Intelligence Scale, Form 1. Those students who were classified by the Wechsler as 'Dull (80-89 *IQ*), Average (90-109 *IQ*), and

Bright (110 and above *IQ*) were administered *AM* individually. The total sample for students was 49.

Fourteen- and 16-year-old male delinquents were sampled at a New York State Training School. Those delinquents who had not previously been administered Form 1 of the Adult Wechsler Scale, were administered this scale. Using the intelligence score criteria discussed above, all delinquents classified as Dull, Average, and Bright were given *AM* individually. Total *N* was 67.

D. RESULTS

In Table 1 are the Wechsler Scale *IQ*'s and subtest weighted scores for the students and delinquents. The students have a fairly homogeneous *IQ* with

TABLE 1
CORRELATIONS OF *AM* WITH WECHSLER SCALES AND SUBTESTS FOR STUDENTS AND DELINQUENTS

Scale or subtest	Test description	Normals <i>IQ</i> or wt. score	<i>r</i>	Delinquents <i>IQ</i> or wt. score	<i>r</i>
Verbal		101.29	.354*	87.38	.345*
Performance		103.20	.341*	99.73	.190
Full		102.92	.371*	92.53	.380*
Information	Memory pertinent facts	9.12	.321*	7.24	.275
Comprehension	Conventional judgment	10.18	.243	8.56	.249
Digit Span	Attention	7.61	.035	6.76	.117
Arithmetic	Concentration	7.76	.381*	6.04	.342*
Similarities	Verbal concepts	9.53	.462*	7.56	.357*
Vocabulary	Organization of memories and concept formation	8.65	.495*	7.00	.391*
Picture Arrangement	Anticipations, visuo-motor grasp of social situations	10.12	.058	10.20	.165
Picture Completion	Recognition and grasp of whole situations	10.06	.375*	10.11	.365*
Block Design	Visuo-motor coördination and organization	9.98	.313*	9.36	.131
Object Assembly	Visuo-motor coördination and anticipation	9.39	.364*	11.13	-.099
Digit Symbol	Visuo-motor coördination concentration and learning	9.02	.162	7.53	.149

*Significant at least at .05 level of confidence.

respect to Full, Verbal, and Performance Scales. All three scores are slightly above those for the general population. The delinquent Full Scale *IQ* is lower than that of the general population and 10 points lower than for the students.

The delinquents score highest in Performance, seven points higher than their Full *IQ*. The 12-point difference between their Performance and Verbal *IQ*'s is significant at the .01 level of confidence. Delinquents scored considerably lower than the students in every verbal subtest but at about the same for every performance subtest except Digit Symbol where they scored significantly lower and Object Assembly where they scored significantly higher at the .01 level of confidence. Their two highest scores were on Object Assembly and Picture Arrangement. This sample delinquent population, at least, confirms the assumption made that these subjects are action-oriented, do better in the performance than in the verbal areas, and do their best on the Object Assembly and Picture Arrangement subtests.

TABLE 2
COMPARISON OF STUDENT AND DELINQUENT MEAN *AM* SCORES

	Mean	Sigma	<i>N</i>	<i>t</i> -score	<i>P</i>
Students	36.06	4.02	49		
Delinquents	34.91	4.46	67		
				2.08	.02

The delinquents scored lower than the students on *AM*. In Table 2, it can be seen that the mean *AM* score for the delinquents of 34.91 is significantly lower at the .02 level of confidence than the student *AM* mean of 36.06.

The correlations of *AM* with Full, Verbal, and Performance Scales and with the various subtests of the Wechsler for the students and the delinquents are also given in Table 1. Product moment *r*'s were used to facilitate comparisons between the different *r*'s. While these coefficients may underestimate the relationships as measured by *Eta*, the differential values, of interest here, remain fairly constant (3, 9, 10, pp. 276-278, 13).

For both students and delinquents, the Full and Verbal Scales and the Performance Scales for the students correlate significantly with *AM*. The delinquents' Performance scores do *not* correlate significantly with *AM*. Those delinquents who fared well on Performance did not as a rule do well on *AM*.

All correlations of *AM* with Wechsler subtests that are statistically significant for delinquents are significant for students. These are Vocabulary, Similarities, Arithmetic, and Picture Completion. The students also have significant correlations for Information, Block Design, and Object Assembly. The tests for both samples that do *not* correlate significantly with *AM* may be categorized (1, p. 549) as memory for pertinent facts, conventional judg-

ment and grasp of social situations, and visuo-motor coördination with concentration and learning aspects. While the delinquents score as high or higher on tests involving in part visuo-motor coördination (action-oriented situations) such as Picture Arrangement, Block Design, and Object Assembly, the latter two delinquent scores do not correlate significantly with *AM* and do so for the students. Consequently, *AM* is probably measuring less visuo-motor coördination and speed factors but more of other factors—possibly “*g*” and/or perceptual-organizational processes.

For the students, the only differences between correlations that are statistically significant are those of Vocabulary and Similarities which are higher than Digit Span and Picture Arrangement. Verbal concept formation for the student sample seems to be most significantly related to *AM*. Every correlation for the delinquents that is significantly correlated with *AM* is significantly greater than the Object Assembly correlation. The delinquent Object Assembly score actually has a negative correlation with *AM*. The only significant difference of correlation between both samples is the significantly higher student correlation of *AM* with Object Assembly. This, despite the fact delinquents obtained their highest weighted score on Object Assembly, significantly higher than the students' score.

E. CONCLUSION

It would appear that Object Assembly largely measures visuo-motor coördination and speed factors for delinquents but the successful performance on this test is not necessarily related to the general intellectual ability measured by the Wechsler Full Scale. When motor action per se is minimized and perceptual-organizational processes are stressed as in the Assembly Method, the delinquents do poorer than the students. This should be kept in mind when evaluating the performance of delinquents on the Object Assembly subtest. On the other hand, the results of this study enhance the diagnostic implication of Object Assembly for delinquent and psychopathic subjects.

F. SUMMARY

The 12-to 16-year-old delinquents sampled in this study presented the characteristic pattern on the Wechsler-Bellevue described by Shafer and others. Namely, this pattern consists of a superiority of Performance over Verbal level and high scores on subtests that largely involve visuo-motor coördination and speed factors, particularly Object Assembly and Picture Arrangement. As predicted, on a test of perceptual-organizational ability where verbal and

motor factors are minimal, they fared significantly lower than matched student subjects. The results of this study suggest a diagnostic use of Object Assembly for delinquent and psychopathic personalities.

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THE EFFECT OF RELEVANT AND NON-RELEVANT SOURCES ON ATTITUDE CHANGE*

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A. INTRODUCTION

Early research concerning communications in which a source makes an assertion about a concept generally demonstrated that when a positive source makes a statement, attitude change toward the concept is more often in the direction of the statement than it would ordinarily be. On the other hand, when a negative source (a source about whom a subject's attitude is unfavorable) makes an assertion, change will be minimal, or even opposite to the assertion.

These results can be explained in terms of Newcomb's theoretical model (2). According to Newcomb, where a source transmits information to a subject about a concept, the effect of that information will be determined by (a) the subject's orientation toward the concept and by (b) the subject's orientation toward the source. Newcomb points out that the communication is characterized by a balance of forces in a field dynamic situation, that is, a change in any part of the system may lead to changes in any of the other parts. In view of this situation, Newcomb postulates a persistent "strain toward symmetry."

This "strain toward symmetry" is essentially the same phenomenon as the "pressure toward congruity" demonstrated empirically by Tannenbaum (4) and postulated by Osgood and Tannenbaum (3).

Tannenbaum systematically explored the relationship of concept-change in response to assertions by various sources, noting not only change in attitude toward the concept, but also change in attitude toward the source of the assertion as well. Prior investigation had not been concerned with the possibility that attitudes toward the source itself might undergo change. Yet the unity of Newcomb's system and the congruity principle both predict that approval of the source will be influenced by the total communications situation.

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According to the congruity principle, stress is created by exposure to a message in which a source makes an assertion about a concept, provided that initial attitudes toward the source and concept are not already perfectly congruous. Either concept-shift (change in attitude toward the concept) or source-shift (change in attitude toward the source), or both, may result from the attempt to achieve greater congruity.

Osgood and Tannenbaum provide a mathematical model by which source-shift and concept-shift may be predicted (knowing original attitudes toward both the source and the concept) in terms of scale units on the Semantic Differential, used as a test of attitude (3).

Tannenbaum obtained a correlation of .91 between predicted and obtained values of attitude shift. However, a subsequent study provided only limited support for the principle of pressure toward congruity (1).

The present study was designed for two purposes: (a) to investigate one of the specific aspects of the source itself which seems likely to influence attitude change resulting from the total communications situation, and (b) to determine whether the factor of the relevance of source to concept acts as a limiting factor on the principle of congruity in attitude change.

It was expected that a source of given positive or negative attitude value will be most effective when communicating in an area of competence or familiarity, and least effective when communicating in an area of which he may be presumed to have little knowledge.

B. METHOD

Typical attitude-change procedure was used. Subjects were pre-tested to determine attitudes toward both sources and concepts. Approximately two weeks later, they were given experimental material to read. They were then tested again for attitude.

Experimental materials consisted of short (150 to 200 words) fictitious newspaper stories in which a source made an assertion about a concept. The source, the concept, and the direction of the assertion were made explicit both in the headline (e.g., WALLACE CONDEMNS PROTECTIVE TARIFF FOR FARM CROPS) and in the body of the story.

Stories were printed in newspaper type, and set in newspaper column width. Subjects were told that the stories had been clipped from non-local newspapers and reproduced exactly as they had been printed.

Sources and concepts were selected in pairs, so that Source 1 was relevant to Concept 1, but not relevant to Concept 2. Source 2 was relevant to Concept 2, but not to Concept 1. For each concept, two stories were written.

These stories differed only in the use of first, the relevant source, and second, the non-relevant source. Except for the source, the content of the two stories on each concept was alike. Sources 3 and 4, and Concepts 3 and 4 were selected in the same manner. Thus, each source and each concept was used both in relevant and in non-relevant situations. The sources and concepts used are presented in Table 1.

TABLE 1
EXPERIMENTAL AND CONTROL ATTITUDE OBJECTS

<i>Experimental Concepts</i>	<i>Experimental Sources</i>
1. Protective Tariffs for Farm Products	1. Henry Wallace
2. Abstract Art	2. Director of the Museum of Modern Art
3. Flexible Price Supports	3. U. S. Department of Agriculture
4. Recognition of Red China	4. John Foster Dulles
<i>Control Concepts</i>	<i>Control Sources</i>
5. Brannan Plan	5. Illinois Agricultural Experiment Station
6. Smoking	6. American Medical Association

Two groups of 40 college students each were used. Most of the subjects were sophomores or juniors, and beginning majors in journalism. Each group read two stories in which the source was relevant and two in which the source was not relevant.

The measure of attitude was a cumulative score on the evaluative factor scales of Osgood's Semantic Differential (3).²

In addition to attitude scores on the sources and concepts included in the experimental materials, both groups were tested for attitudes toward two control concepts and two control sources.

C. RESULTS

1. *The Control Group*

Attitude change scores were compared by means of the *t*-test for correlated data for both groups on the four control items. Neither group showed a significant difference in attitude from pre-test to post-test on those control items.

2. *Average Attitude Change*

Mean attitude change from pre-test to post-test was compared for each source and for each concept under conditions of relevance and non-relevance. These data are presented in Table 2.

²Evaluative scales: good—bad, beautiful—ugly, fair—unfair, clean—dirty, pleasant—unpleasant, valuable—worthless. Non-evaluative filler scales: fast—slow, active—passive, strong—weak, large—small.

When *t*-tests (correlated) were made, all concepts showed change when they had been presented in a relevant situation. Two of them, however, reached a probability value of only 10 per cent. However, only one concept showed change in a non-relevant situation.

TABLE 2
MEAN ATTITUDE SHIFT FOR EACH CONCEPT AND SOURCE UNDER CONDITIONS OF
RELEVANCE AND NON-RELEVANCE

Sources	Relevant situation change	<i>P</i>	Non-relevant situation change	<i>P</i>
<i>USDA</i>	+7		+5	
Museum of Modern Art	-130	.001	-106	.01
Henry Wallace	+ 51	.05	- 27	
John Foster Dulles	+ 10		- 23	
<i>Concepts</i>				
Flexible Price Supports	+ 45	.10	+ 27	
Protective Tariffs	- 84	.10	- 31	
Abstract Art	- 59	.01	- 32	
Red China	+ 94	.02	+ 90	.01

When source-shift is considered, two sources showed a significant shift when they had been presented in a relevant situation, and one of those also produced a significant shift when presented in the non-relevant situation.

3. *Attitude Change Predicted by Congruity*

To determine the effectiveness of prediction by the principle of pressure toward congruity, each subject's original attitude toward source and concept was used and individual predictions were made. The percentage of the total shift which was predicted by the principle of congruity was determined. These data are presented in Table 3.

Total shift, regardless of direction, was about the same for relevant and non-relevant situations. However, for three concepts, the principle of congruity predicted a significantly greater percentage of the total change when the concepts were presented in relevant situations than when they were presented in non-relevant situations. With the fourth concept, however, the reverse was true, with the principle predicting significantly better in the non-relevant situation.

With source-shift, congruity twice predicted significantly better in the relevant than in the non-relevant situations.

When the average percentages of correct predictions over all sources and over all concepts were considered prediction was significantly better in the relevant situations. In the relevant situation, 83 per cent of the total

source-shift was predicted, while only 70.5 per cent was predicted in the non-relevant situation. Concept-shift was predicted 97.5 per cent of the time in the relevant situation, but only 82.5 per cent of the time in the non-relevant situation.

TABLE 3
PER CENT OF TOTAL ATTITUDE SHIFT BY INDIVIDUAL Ss WHICH IS PREDICTED BY THE PRINCIPLE OF CONGRUITY

Sources	Relevant situation Total change	Per cent predicted	P*	Non-relevant situation Total change	Per cent predicted
<i>USDA</i>	86	79	.05	87	61
Museum of Modern Art	136	90		105	92
Henry Wallace	97	81	.01	121	56
John Foster Dulles	84	82		67	73
Mean		83	.01		70.5
<i>Concepts</i>					
Flexible Price Supports	115	99	.01	115	87
Protective Tariffs	166	98	.01	147	86
Abstract Art	69	87	.01	92	63
Red China	150	85	.01	152	97
Mean		97.5	.01		82.5

*P of differences between proportions.

D. SUMMARY AND CONCLUSIONS

An experiment was conducted to determine the effect of the relevance or non-relevance of source to concept in a communication situation where attitude change is desired. Results of the experiment support the following conclusions:

1. Relevant situations tend to produce greater average attitude change than non-relevant situations. They do not, however, produce greater total (regardless of direction) change.
2. The principle of pressure toward congruity, postulated by Osgood and Tannenbaum, usually predicts attitude change more effectively when the source is relevant to the concept.
3. The principle of congruity does predict attitude change better than chance, even when the source is not relevant to the concept.

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TOWARD A NEW INSTINCT THEORY*

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There is today a widely felt need for a sound instinct theory. In trying to establish such a theory we meet great difficulties because we are haunted by the specters of old erroneous notions, and by the misconceptions which these notions have produced in the minds of opponents of instinct theories. The most promising way of laying the ghosts of the past is to confront them with new more sensible ideas. This of necessity means laborious work. For time honored and widely and uncritically accepted old concepts may make even the clearest thinker sometimes accept them without further examination. In the seventh chapter of his book on "Motivation and Personality," A. H. Maslow presents the longest step which we have so far taken towards a new instinct theory. In discussing my own ideas on the subject, I shall compare them with Maslow's wherever this can be done fruitfully.

A new instinct theory will not dissipate its strength by discovering instincts in a dozen widely different fields of mental phenomena, but rather will concentrate on the few fields in which it can convincingly demonstrate the need for such a theory. It is true that the wildly indiscriminate use in the past has discredited the term instinct, but this is not a justification for abandoning it completely. If we are able to cleanse it from the follies of the past we will find that it can render a new and important service. There are two fields, the field of learning and the field of motivation, in which an instinct theory seems to me to be indispensable for full understanding of the phenomena in the fields. In the field of learning, instinct stands for the part of behavior which would be learning if we were allowed to assume the presence of learning, but where we have good reasons for denying its presence. Instinct here is the substitute for learning. It is true that we do not know the nature of the substitute, but it is important to be aware of its existence and of the fact that there is something present that cannot be explained. This type of instinct is mainly found in animal behavior, and since I am concerned with human behavior I shall not discuss it in this presentation.

The second type of instincts is found in motivation. Here instincts are basic motives which means two things: instincts are not based on other mo-

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tives, and all other motives are based on instincts. The life of an individual is full of motives. In the case of most motives if we raise the question as to why we have them, in the answer which we receive another motive is given. First motive: I want to get up in the morning. We ask: Why? Answer: Because I want to go to class. This is the second motive. This second motive in turn can be treated like the first. Question: Why do I want to go to class? Answer: Because I want to learn something. And again if the question is asked why I want to learn something the answer may be given: Because I want to receive good grades. Then if I ask the question: And why good grades? The answer may be: For the sake of social prestige. But if I ask the question now: Why social prestige?, *no* answer can be given. I have arrived at the basic motive or instinct. I just want to have social prestige, and that is all there is to it. Our example illustrates a large part of motivation: motives based upon each other, explained by each other, and all of them based upon instincts. The situation in this area of motivation is much more complex than presented here. But for the present discussion our presentation is sufficient (1). While we find here one motive based upon the next without any intermediate link there are many other motives which have in common with the first group their dependence on instincts, but differ greatly from them in the manner in which they depend upon them. In this second group motives are connected with each other by an intermediate link, namely the realization or non-realization of a motive. An example is offered by the motive of aggression. Lack of realization or unsatisfactory realization of a strong motive would lead to a motive of aggression. If, in turn, the motive of aggression cannot be realized, let us say the individual finds counter-aggression stronger than his aggression, a third motive will emerge, namely coöperation. The individual finds it safe to coöperate since he cannot fight successfully. So we find in the second group a chain of motives as we found in the first group, and in both groups all motives can be traced back to instincts at the end of the chain, the difference being that in the second group we always find between two motives the connecting link of complete or incomplete realization of the first of the two motives.

The first justification then of an instinct theory in the field of motivation lies with the accomplishment of establishing a very orderly system in which every single one of the thousands of motives of the individual is assigned its place in relation to other motives. In the final analysis the entire field of motivation can be explained by being traced back to instincts. Considering the vast number of motives and the great anarchy in which pre-instinct theory left them, this is no mean achievement.

If the main function of instincts is to form the foundation for all other motives we can readily see that there is no necessity for them to always be strong or universal. The emphasis which the old instinct theory put on strength and universality made it especially vulnerable to attacks of opponents. But instincts can be weak and instincts can be present in some and absent in others, and yet can be the basis for other motives.

The second achievement, similar in significance to the first for our understanding of personality, will be seen when we turn to the theory which replaced the old McDougall theory in the thinking of most of its opponents, namely the theory of social learning. This theory maintains that there are no instincts, but what is called instinct is the product of social learning. Society according to it, teaches us what motives we are going to have. There is no doubt about the tremendous amount of teaching which the individual receives from his society. But the picture which this theory draws of the ways in which the individual treats the material taught is much too primitive and too naïve. Because we are taught it is implied that we accept what we are taught when in truth all that we do is to treat the teachings of society as suggestions which we may decide to completely or partly accept or reject. The decision as to what we are going to do with society's suggestions lies with our motives, and more precisely with our instincts, since all other motives can be led back to instincts. To be sure, we do learn in the process, but taking in what comes from our society is only the beginning of a much more complex process. This is true even in the case of the conformist, the most extreme example, and most favorable to a social learning theory. Even he who takes over whatever comes from society, as we say, indiscriminately, has motives for being a conformist. If he would not have motives of social prestige, of security, of identification with a conforming parent he would not be the indiscriminate learner. What holds for the conformist, holds in more obvious ways for all who are critical of what society teaches, and regarding the great complexity of society's teachings, for many of us a critical attitude is a necessity. Basically, the social learning theory is nothing but a glorified version of the old stimulus-response theory. As in all stimulus-response theories the main stress is on the stimulus, the response is explained by the stimulus, the individual who responds is nothing but the target for the stimulus, his own contribution to the final product is nil. The instinct theory deals with the same situation, but gives a much more adequate, though more complex picture of it. Far from disregarding the rôle of social learning, it teaches how society stimulates our motives into action. This is important, but more important is the fact that the stimulated motive decides on what to do with the stimulus and on the nature of the action.

Here lies the second justification for formulating a new instinct theory in the field of motivation. It makes man an active part in his dealings with society and not just a helpless and passive receiver or container. It could be argued that there is no need for going back to instincts, that it is enough to refer to motives in general in order to see man's function here. This argument is short sighted because it overlooks the question as to how to account for the motives, and social learning theorists, sensing this shortcoming have been quick in asserting that the motives are nothing more than the products of past learning, and that, therefore, their autonomy is specious. How wrong this is can be seen in all instances in which we make a choice between present and past social learning, when we discard the past and accept the present social learning, for example when the grownup drops convictions acquired in childhood. One time we accept present learning, another time we reject it, one time we retain past learning, the other time we give it up after having retained it for a long time. Only an instinct theory which makes motives the autonomous critical judge of the material offered has the answer. Much can be said about the unnecessary ballast by which McDougall beclouds and discredits his theory, yet, he had a penetrating understanding of the motive as "the mover." As much as terminology is involved, the aspect of instincts under discussion here, more than any other, speaks for retaining the term "instinct." Although it suffered severely from ambiguous use, it always preserved the strong connotation that man is moving the world, and not the world moving man.

In our thinking the social learning theory leads to a more comprehensive problem with which a new instinct theory must come to grips before it can safely be established, namely, the problem of the general ways in which intelligence is related to motivation. For many centuries the most commonly held view on man has been that he is a rational being, that in order to understand him we must look at intelligence or reason as the foundation of his being with all the rest of personality, including motivation, being based on intelligence. If this type of rationalism were valid, instinct theory could not be valid because instincts would not be any longer basic. A first glance reveals the closeness of the relationship between motives and intelligence. But while this closeness cannot be denied it has made for many easy misunderstandings. For our discussion the distinction between basic and derived motives will prove helpful. The first function of intelligence lies in the aid it gives us in selecting our derived motives. If an individual wants to have social prestige, assuming this is a basic motive with him, his intelligence will tell him how to get it. For example, he may select the derived motive of

wanting to become the president of the United States. Our illustration demonstrates the importance of intelligence for motivation, and, at the same time, the limitations of this importance. It shows importance because instincts like all other motives want to be realized and intelligence, by selecting derived motives, serves this purpose. On the other hand the limitations of the importance are clear because the use of intelligence depends on the underlying instinct. In our illustration, if the man had no motive of social prestige, he would have no need for using intelligence in order to select the derived motive with the help of which he will realize the motive of social prestige.

The second function of intelligence in regard to motivation lies in the help which it offers for the realization of derived motives. In our illustration the man finds with his intelligence ways that he can become president of the United States. The second function of intelligence supplements the first, and when we consider that both functions apply to many large chains of derived motives and to the entire field of motivation, we grasp the very decisive rôle which intelligence plays in motivation. However, the second function can take away as little as the first from the limitations of intelligence: as important as it is for motives to be realized, there must be basic motives first before there is any need for realizing them.

The rôle of intelligence in motivation is not exhausted by describing its two functions related to derived motives. A third function comes even closer to instincts. Intelligence is instrumental in arousing instincts. For the understanding of this function we shall deal with a statement that has caused much confusion, namely that instincts are present at birth. If this statement were true, many motives which we consider instincts could not be instincts. The newborn baby could not have any social motives since they require a knowledge of the presence of other people which the baby does not have. But this is not a point against instincts, it is a point against overdoing the importance of birth. As birth is not the beginning of mental life, so mental phenomena can emerge long after birth as well. While a person may be willing to accept the emergence of instincts after birth, he may still argue that in the case of the social motives intelligence causes them, and therefore social motives are based on intelligence, and may not be called instincts. I concede that intelligence is necessary to have a social motive. It is true, we must know about society to want to associate with it or to get prestige in it. Knowing about the existence of society alone, however, does not produce the social motive. In many cases knowing about it may induce one to do the opposite and to turn away from society. We must distinguish between arousing and

causing a motive. Intelligence can arouse the motive, but will not cause it. It can arouse it only if it is potentially present. If it is not, all influence of intelligence will be to no avail.

In regard to the relationship between instinct and intelligence I must take issue with Maslow. He contends "The vital and even tragic mistake (in view of the historical consequences) has been made from time immemorial of dichotomizing instinctive impulse and rationality in the human being. It has rarely occurred to anyone that they might both be instinctoid in the human being, and more important that their results or implied goals might be identical and synergic rather than antagonistic" (p. 131). Is Maslow not here confusing intelligence with the motive of intellectual curiosity? The latter is a motive among others, and important with many individuals. Intelligence itself cannot be an instinct in the sense in which motives can be instincts because intelligence is cognitive and lacks the conative aspect indispensable for motives. The confusion arises easily because using intelligence can be a goal for motives, but being a goal for motives is far from being a motive. In addition, intelligence, as we have seen is a powerful tool for realizing motives, but this again does not make intelligence a motive. The clear-cut dichotomy between intelligence and motives persists even if in our experience the two are working closely together, are "synergic" and not "antagonistic" to use Maslow's terms. We find many phenomena of widely different nature integrated in our mental experience. Therefore I can agree with Maslow, when he continues: "It is our contention that the impulse to know and to understand may be exactly as conative as the needs to belong or to love" (p. 132). I agree with this as far as it goes explicitly. But I disagree with the implication that the impulse to know is identical with knowledge itself, and that the impulse to understand is identical with understanding.

Because of the basic difference between motives and intelligence I cannot accept another concept of Maslow, namely that of "instinctoid" elements. One way of demonstrating that there are only "instinctoid" elements, and not full fledged instincts, is to deprive the instincts of goals. Maslow calls them "simple conative lack, tied to no intrinsic goal achieving behavior as blind, directionless demands, like Freud's id impulses" (pp. 127-128). Maslow makes two very different statements here. First that instincts must be distinguished from the goal achieving behavior that may or may not follow them, secondly that instincts are blind, directionless. I have no objection to the first statement. The important statement is the second. I can interpret blind and directionless only in one way, namely as meaning lacking goal. This is impossible. He who says that instincts are conative is also saying

that they have goals. These goals may be vague and general, nevertheless they are goals. It is impossible to conceive of any motive without conceiving of the goal intrinsically belonging to it. Hunger pangs are not motives, the hunger drive is conative only because it is directed toward a goal.

Maslow adds: "Even on logical grounds alone, there is no reason why we should be forced to choose between the full instinct, complete in all its parts, and the non-instinct. Why may there not be instinct remnants, instinct like aspects of impulse alone or of behavior alone, difference of degree, partial instincts?" (p. 127). We are forced to choose between instinct or non-instinct if we mean basic motives by instincts. Either there are basic motives or there are none. No room is left for difference of degree or for partial instincts. Motives cannot be partially basic. Even less acceptable are "instinct like" aspects of impulse as those would suggest something that only appears to be an instinct, but on closer observation turns out not to be an instinct. An easy misunderstanding of our problem could stem from two facts. First, from the fact that instincts are intimately connected with other mental phenomena, as we have just seen in the case of instincts and intelligence. As little as they are the same because they are close together, as little either loses of its full nature due to their closeness. The instinct does not become an instinctoid element. Secondly, misunderstanding may derive from the fact that a motive may be basic with one individual and derived with another, or with the same individual basic in one stage of his life and derived in another stage, or even with the same individual partly basic and partly derived in the same experience. To illustrate the last point: In trying to solve a scientific problem I do it partly because I want to find the truth, and nothing else motivates me as much as this part of my motivation is concerned, the motive of scientific curiosity here being an instinct. I do it partly because by finding the truth I want to acquire social prestige, the motive of scientific curiosity here being derived from and based on the motive of social prestige. Thus basic and derived motives can be very close together in our experience, but that does not make the basic motive less basic or partially basic.

Incidentally because the same motive can be both basic and derived, it is foolish to raise the question whether a certain motive is an instinct if the question implies that by being an instinct it could never be derived. In a case like this, in order to avoid linguistic difficulties, and to make the situation perfectly clear, we should treat the two motives for what they are, namely two different motives, one a basic motive of social prestige, the other a derived motive of social prestige.

In Maslow's last statement the notion "instinct like remnants" leads to

another point on which I disagree with Maslow, and, to my knowledge, with all other students in the field. "Instinct like remnants," as I interpret it, suggests the hereditary nature of instincts. While the psychologists favoring an instinct theory of some sort will reject social learning as the foundation of instincts they will not be willing to give up heredity as the basis of instincts. The consensus of opinion found here amazes me since it is extremely difficult to prove the hereditary nature of motives. Let us take a comparatively simple case and one which seems to strongly favor heredity. A man is found to have a very strong motive of social prestige, and the same was true with his father. In order to exclude the environmental influence of father on son let us assume that the father was dead when the son was born. Are we justified in saying the son inherited the motive from the father? The study of chromogenes, as much as mental phenomena are concerned, is so much in its infancy that it can give us no help. When we start analyzing the two motives we encounter forbidding difficulties. While the two motives resemble each other in strength they may be two very different motives. The one may be a basic motive, the other a derived motive, derived from another basic motive. Let us say the son is a lawyer in the city of New York who knows that having social prestige will be indispensable for acquiring a large clientele, and therefore, although he is not interested in the motive of social prestige as a basic motive, he will strive for its realization just the same, since it is a derived motive, the realization of which will lead to the realization of another motive, in which he is greatly interested. The father was a farmer in the country to whom social prestige was unnecessary in order to make a living, but he had a strong motive of social prestige which would suggest that with him it was a basic motive. How great the difference between father's and son's motive is can be demonstrated from the fact that in the son's case the motive would disappear if it were not a means for realizing another motive while such a possibility is absent in the father's case. In most instances matters will be even more complicated because there is no need to assume that the father had only a basic motive of social prestige and the son only a derived motive, but probably in addition to having a strong basic motive the father may have had a weaker derived motive of social prestige, and vice versa with the son. As formidable as the difficulties to ascertain the hereditary nature of motives may seem (one is reminded of Gardner Murphy's statement that the study of heredity in psychology is a "quagmire"), they constitute not the only and not the greatest obstacle for accepting the view that instincts have to be hereditary. In discussing the origins of human nature the sometimes explicit, more often tacit contention is made that the

only choice lies between environment and heredity. Even the possibility of a third explanation is neither seen nor argued. And yet, a third possibility is given, namely that with the appearance of a new human being in this world, at least part of his being may be new, that is, not caused by past factors. A concept of this type will dismay the rigid scientist who is convinced that every phenomenon must have a cause since finding causes happens to be the main business of science. It does not appear equally fantastic to the same scientist on the phylogenetic scale when the student of evolution ponders the emergence of a new and higher species. In discussing the single individual I know that the assumption that basic motives lack any foundation will round out the picture that I have drawn of the relationship between motivated individual and environment. If man is as active and independent in dealing with his environment as it appeared there, then the idea that his motivation is self-sufficient and not depending on heredity for explanation will add to the active rôle which he plays when he is confronted with the suggestions of his environment.

The last chief point on which I differ with Maslow concerns his statement to the effect that instincts are natural, healthy, and good. Unfortunately, these three terms belong to the most ambiguous terms in our modern ambiguous vocabulary. This is particularly true with the term "natural." Behavioral phenomena opposed to each other both have been called "natural." In a more passive society meditation may be considered very "natural" while in a very active society it would be "unnatural." It would be a blessing if we would discard this term. In our field the most that it can mean as far as I see would be that instincts are basic motives, part of our "natural" equipment which adds nothing new to our knowledge. It is not much better with the term healthy, mainly because physical and mental health seem to differ very greatly. Yet, even if we were clear on what we mean by health I do not know whether from the fact that frustration of strong instincts leads to mental sickness the other fact follows that in all cases of realization of strong motives the result will be health. On the contrary, as the realization of strong motives often requires strong effort it may lead to exhaustion and sickness, as with motives of social prestige, scientific curiosity, or creative expression. The political leader, scientist, artist, deeply engrossed in his work may forget about his mental or bodily limitations. Also, as much as the negative effects of frustration are concerned, Freud's theory of sublimation would make it appear possible that in a considerable number of cases frustration does not lead to mental harm. I was unable to resolve a certain contradiction of minor importance in Maslow's presentation. While on p. 125

he contends that instincts, if not realized, lead to pathology, on p. 129 we read: "Why should there not be needs that, though instinctoid, yet are easily repressed, suppressed or otherwise controlled?"

While the term "good" again is exasperatingly ambiguous, if we could decide on its meaning for our purposes, the discussion would be more fruitful than in the other two cases. For our purposes "good" could refer either to mental health or to means being good for an end (even an evil end), or to the viewpoint of society or to the viewpoint of morality. I believe Maslow thinks of the two last meanings although the profound problem is here involved whether to take the two viewpoints as being identical or as very different from each other. The old instinct theory believed that instincts are evil while Maslow takes the opposite view without qualifications. The question to my mind is: Has not the untenable radicalism of the old view pushed him farther in the opposite direction than he would have otherwise gone? To me the entirely good man is no improvement over the entirely evil man. If we understand that good and evil are moral terms, and Maslow suggests this strongly when he enumerates greed, selfishness, hostility as being evil (p. 129), then we are allowed to consider many egotistic or evil motives as being derived motives of the second type which I discussed, namely motives which have grown out of failure to realize basic motives, as Erich Fromm has taught us. No doubt, the existence of derived motives of this kind would not contradict the contention to the effect that all basic motives are good. The question is whether they exhaust the category of evil motives, and here I cannot follow Maslow. If man is a moral being and if morality is a vital part of man's being, then some evil motives must be as basic as some good motives are, because out of the conflict between them there arises the moral experience. It tells man that he can follow evil motives as well as good motives, and which ones he follows will spell his moral triumph or failure (3). By accepting the moral nature of man we move one step farther in demonstrating the autonomous nature of man beyond his independence from environment and from heredity. Of course it may be argued that man is not a moral being, at least not in the sense in which I see it, but psychologists should leave that kind of argument to sociologists who are blind to the struggle between good and evil which is an omnipresent and deep going psychological experience for all humans except psychopaths. True, the vision of the basically good man flatters our optimism, as the vision of the all evil man pleases our pessimism, but we are interested in realities, not in the products of our wishful thinking.

SOME EFFECTS OF IRRELEVANT INFORMATION UPON PROBLEM-SOLVING BY SMALL GROUPS*¹

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A. INTRODUCTION

The study of the behavior of small groups has aroused a great deal of interest in recent years. With this interest has come an increasing awareness of the importance of the structure of the group in the determination of the interaction process. Group structure is conceived not as a single attribute, but rather as a composite of several aspects of the group. Thus, one can isolate a number of group "structures": e.g., sociometric structure, communication structure, power structure, etc. This report is concerned with the communication structure, defined as the arrangement of communication channels among the group members. When this structure is *imposed* upon the group, it is referred to as a communication net, or, more briefly, simply as a net.

Experimental studies have shown that not only does the communication net affect group behavior, but also that this effect is modified by the operation of other variables. Variables which have been found to interact with the net variable include uniformity of information distribution (2, 3), degree of problem complexity (4), type of leadership (5), and number of problems to be solved simultaneously (6). Some limited evidence indicates that noise, defined as anything which transforms a message in an unpredictable way, may also produce differential effects in different communication nets (1).

In general, any condition which increases the difficulty or complexity of the group task will also increase the relative inefficiency of the more centralized nets by enhancing the likelihood of saturation.² The purpose of the present experiment was to test this generalization by studying problem solving by small groups when irrelevant items of information were included

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²Saturation refers to the condition which exists when the input-output communication requirements imposed upon a group member reach a certain optimal level beyond which the effects of a favorable position in the net are counteracted.

among those needed to complete the assigned task. Since the correct solution of the problem could be attained only by selecting the relevant information and excluding the irrelevant information from further consideration, this procedure should make the group task more complex than in those situations where no irrelevant information is present. Therefore, group performance and satisfaction should be poorer with irrelevant information than with no irrelevant information, and this effect should be greater in the more centralized communication nets.

B. METHOD

1. Apparatus

The apparatus used in this experiment is the same as that described in earlier reports (4, 5). It consists of four cubicles which are interconnected by means of slots in the walls separating them. Group members communicate with each other by writing messages on cards and passing them through these slots. Different communication nets can be imposed by closing the appropriate slots. The two nets used in this experiment are shown in Figure 1.

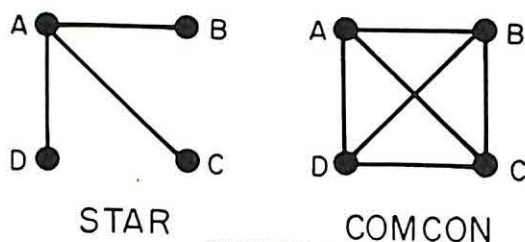


FIGURE 1

THE COMMUNICATION NETS: THE DOTS REPRESENT POSITIONS WITHIN THE GROUP AND THE LINES REPRESENT TWO-WAY COMMUNICATION CHANNELS BETWEEN POSITIONS

The two problems used were arithmetic problems similar to those used in earlier experiments (3, 5). Each problem required 12 items of information for solution. The materials for each problem consisted of 16 3 x 5 cards; a complete statement of the problem was typed on each of four cards and each item of information was typed on a separate card. In addition, eight irrelevant items were prepared and typed on eight separate cards. These items were similar to the relevant items, i.e., it was not immediately obvious that this information was not useful for solving the problem.

2. Subjects

The Ss for this experiment were 96 male undergraduates at The Johns Hopkins University. They were recruited by *E* and were paid for their services.

3. Procedure

The *Ss* were randomly assigned to 24 four-person groups. Twelve of these groups were placed in the star and 12 in the comcon communication net. Half of the groups in each net were given only problem-relevant information and the other half were given problem-relevant *and* problem-irrelevant information.

Except for the experimental variations, all groups were treated alike. After all four *Ss* had been seated in their respective cubicles, each person was handed a mimeographed set of instructions which informed him of the number of persons in the group, the method of communication, the arrangement of the communication channels, and the general nature of the task.

Each group was required to solve two problems. Before beginning a problem, each *S* was given a card containing a statement of the problem and three cards each of which contained one relevant item of information. Each *S* in the irrelevant information condition was given two additional cards, each of which contained one irrelevant item of information. Items were randomized among group positions.

When the two problems had been solved, each *S* was required to check a rating scale indicating his satisfaction with the group operation. The scale values ranged from one for very low satisfaction to nine for very high satisfaction.

C. RESULTS AND DISCUSSION

The results of this experiment are given in Table 1. Data were analyzed by means of analysis of variance. Significant differences due to trials were found for all measures, as in previous experiments of this type. This apparently represents learning and is of no great importance for the hypothesis under consideration.

TABLE 1
MEANS AND STANDARD DEVIATIONS OF TIME SCORES, MESSAGE UNITS, AND RATINGS OF SATISFACTION AS A FUNCTION OF THE EXPERIMENTAL CONDITIONS

Measure	Statistic	Star		Comcon	
		Irrelevant information	No irrelevant information	Irrelevant information	No irrelevant information
Time (Min.)	Mean	16.8	10.6	10.9	8.9
	<i>SD</i>	4.0	7.2	4.4	3.0
Message units	Mean	52.0	34.8	64.2	70.8
	<i>SD</i>	27.5	21.7	37.5	15.7
Ratings of satisfaction	Mean	5.1	7.0	7.5	7.6
	<i>SD</i>	1.8	1.8	1.1	0.5

1. *Time*

Time to reach a solution was measured from the "go" signal until the last *S* in the group indicated that he knew the answer. Analysis revealed significant effects due to nets ($p < .05$) and to irrelevant information ($p < .05$). Although the magnitude of the differences due to irrelevant information was in the expected direction, i.e., greater differences in the star than in the comcon, the interaction term was not significant.

2. *Messages*

A message unit was defined as any simple sentence or any meaningful part of a complex or compound sentence. Significant differences in message units transmitted were those due to nets ($p < .05$) and to the nets $\times$ information interaction ($p < .01$). As can be seen in Table 1, the effects of irrelevant information resulted in increased message transmission in the star but not in the comcon. The star is more susceptible to saturation than is the comcon even with relevant information only (2, 6); the additional communication demands resulting from the need to sort out the relevant information from the irrelevant information tends to increase the degree of saturation experienced by the star groups.

3. *Ratings of Satisfaction*

The only difference in ratings of satisfaction which reached an acceptable level of significance was that attributable to nets ($p < .05$). The direction of the differences due to irrelevant information are in the expected direction, however, and both the irrelevant information term and the nets $\times$ information interaction term are significant at well beyond the 10 per cent level of confidence. The data given in Table 1 indicate clearly that the condition least satisfying to the *Ss* was the star with irrelevant information.

The data from this experiment offer some support for the hypothesis that factors which increase the complexity of the group task increase the relative inefficiency of the more restrictive communication net. All differences were in the direction expected on the basis of this hypothesis, and most of them were statistically reliable. Communication nets which restrict the possibilities of group interaction are unsatisfactory for handling complex procedures.

D. SUMMARY

This experiment tested the hypothesis that increasing task complexity will increase the relative inefficiency of the more centralized communica-

tion net. Twenty-four groups of four Ss each were run. Twelve groups were assigned to the star and 12 to the comcon communication net. Half of the groups in each net received only relevant information, whereas the others received irrelevant information as well.

In general, the results supported the hypothesis. Differences in time, messages, and ratings of satisfaction were in the expected direction and most of them were statistically reliable.

Communication nets which restrict group interaction are relatively less efficient and less satisfying to group members than are communication nets which are less restrictive. These differences increase with increasing task complexity.

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A METHOD OF ANALYSIS OF THE PROCESS OF VERBAL COMMUNICATION BETWEEN A GROUP OF EMOTIONALLY DISTURBED ADOLESCENTS, AND THEIR FRIENDS AND RELATIVES*

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A. PROBLEM

Since the advent of residential treatment, a number of books and papers (3, 4, 6, 9, 13, 14) have been written concerning its methods, concepts, and results of treatment. Unfortunately, however, only predominantly impressionistic methods have been used in its description and evaluation. At the present time, the Linden Hill School is engaged in a program of research, utilizing objective techniques concerning the children under treatment, the staff members who treat, the setting and policy of the institution, the theoretical basis of residential treatment as well as the effect of the treatment process upon the children. As part of this program, a study of patterns of, and change in, academic achievement in emotionally disturbed adolescents has already been completed by the author (15).

Foremost among the problems of the research program is the establishment of basic measures of the children's functioning (a) in different situations, (b) in relation to different people, and (c) at different periods in time. Also of primary importance is the establishment of measures of the stimuli impinging upon the children. A study of the written communications between the children at Linden Hill School and their relatives and friends living in the community was undertaken to explore some of the above problems. The letters written by the children of the Linden Hill School yield a sample of the children's spontaneous verbal interaction with people living in the community, while the letters written to the Linden Hill School children by members of the community serve to give us a record of at least some of the stimuli impinging upon the children.

Examination of the literature in this area yielded few studies that could

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be directly applied to our problem. A review of content analysis studies in the field of personality was completed by this author and summarized in Zubin (17), yielding only two studies dealing with the objective analysis of letters. Baldwin (2) analyzed a number of letters written by one person; categories were established to fit the letters under consideration exclusively and could not be applied to the letters of this study. Andrews and Muhlhan (1) criticized the statistical procedure undertaken in the analysis of Baldwin's data, demonstrating the validity of another method. Unfortunately, Andrews and Muhlhan set up another set of categories peculiar to their material which could not be applied to these letters.

Examination of the literature on the verbal behavior of children yielded a series of studies of spoken language inspired by Piaget (12). He contended that a child's speech begins by being egocentric (where there is no concern for the audience) but gradually becomes more socialized (where the audience is taken into account). Henle and Hubbell (8), in reviewing studies dealing with the above, pointed out some conflicting results concerning Piaget's hypothesis and demonstrated that 40.7 per cent of adult conversation deals with ego-related remarks. They concluded that adults talk about themselves about as much as children.

Another group of investigators, Lorenz and Cobb (11), demonstrated a greater amount of self-preoccupation in a neurotic group of adults than in a normal or a manic group, the last two groups revealing no difference between each other. These investigators used, in addition, various grammatical categories to differentiate normal verbal behavior from that of neurotics and manics, which it was decided were not relevant to this study.

Two other conceptualizations of verbal behavior were originated by Fries (7) and Skinner (16). The first of these analyzed live telephone conversations to originate an empirical grammatical system. Specifically related to the present study were his classifications of "questions," "requests," "commands," and "statements." The second based his analysis of language on descriptive behavior theory. Those classes of verbal behavior found most useful for this study were his "mands" (cf. Fries' questions, requests, commands), "tacts," and "intraverbal responses" (cf. Fries' statements).

The above review, while helpful in setting up categories for this study, also indicates the need for the establishment of a new model for this investigation. The model established (Figure 1) was based in part upon the review of the literature, in part upon examination of some of the letters of this study, and in part upon utilization of some of the clinically derived characteristics of the children. These characteristics included the children's

immaturity, egocentricity, time spent in phantasy, hyper- or hypo-expression of positive or negative feeling, and their relatively limited interpersonal interests. The final list of categories emerged after definitions were sufficiently refined so as to result in reliable data.

This paper presents an objective method of analysis of written communications. Application of the method will be illustrated by presenting the types of verbal behavior manifested by a group of emotionally disturbed adolescents in their letters to adults and other children in the community and by comparing them with the types of behavior manifested by the outside groups writing to the disturbed children.

B. PROCEDURE

1. *Method of Letter Collection*

The children's incoming and outgoing mail is regularly read by the day care staff. The children realize that this is part of the regular set of rules by which they must abide while being under treatment at Linden Hill. It was, therefore, a relatively simple procedure to have this mail copied for detailed analysis without informing the children. The sample of mail, under scrutiny here, was selected by copying all letters during a period of one week and two days.

2. *Population*

At the time of the study there were 26 children under treatment (one child left during the study). They consisted of 13 boys and 13 girls. They ranged in age from 13 to 18. The diagnoses were distributed in the following way: schizophrenia—11, schizo-affective disorder—1, obsessive-compulsive disorder—2, personality deviation with effeminate and homosexual trends—1, infantile personality—3, infantile character structure—1, severe character neurosis—2, character disturbance-passive-aggressive type—1, deferred—4. This was the potential letter writing population. The children actually writing letters during the period of the study were nine girls and one boy; they had the following diagnoses: schizophrenia—5, infantile personality—2, schizoaffective—1, and deferred—2. These children wrote a total of 24 letters.

While all the children at Linden Hill do not have parents, each of them has at least one potential correspondent and most of the children have many more. The sample writing to the disturbed children consisted of 15 adults (relatives and friends of the children) who wrote 28 letters, and of 6 children (relatives and friends) who wrote 7 letters. It is important to note

that most of the letters coming in to the Linden Hill School children give evidence of having been written by emotionally disturbed people. In addition, information concerning the parents of the Linden Hill School children (the parents making up the greater part of the adult letter writing sample), based upon case work interviews, indicates various degrees of maladjustment in this group.

3. *The Content Analysis*

Figure 1 shows the classification of each letter into each of the categories with the exception of the references. A unit is defined as a group of adjoining words that belong in any one category. All material in the letter (with the exception of the greeting and ending) is first coded as a want or a statement; a want is further classified into demands, phantasy, or requests; the latter are categorized into information, behavior, and feeling. The rest of the chart consists of similar divisions.

The relationship among the categories is determined by the structure in which the categories are embedded. It is evident, for example, that the sum of the wants and statements makes up the whole letter, and that any unit that is a want cannot at the same time be classified as a statement and vice versa. The sum of the demands, phantasy, and requests constitute all of the wants and are independent of each other as well as of all statements, i.e., the same group of words cannot be both a demand and a request; on the other hand, any demand is automatically a want. Thus it becomes clear that categories on the same level of classification, as indicated in Figure 1, are independent of each other while categories below other categories are contained in those above them.

The interrelationship among the references differs from that of the other categories. A particular group of words (constituting a unit) may make reference to "I," "you," and a "concrete object." Since the same words are counted separately for each reference that is associated with them, overlap in the units which are ascribed to each of the references must arise.

Below is a list of the categories with definitions for each. Each content analyst had available to him a list of examples for each category; the list was taken directly from a sample of letters not included in the reliability determination. While the complete list is too long to be included here, the definitions of each category will be given:

Definitions of the Categories Used in the Content Analysis of Letters

- I. *Wants*—verbal material in which the writer asks for some information, behavior, or feeling directly or indirectly concerning himself, someone else or some object.

IA. *Demands*—"wanting" with authority, directly expressed without the use of such social forms as "please" or "would you," etc., use of such commands as "you must . . .," or "go . . .," "do. . ."

IB. *Requests*—"wanting" by means of social forms such as "please," "would you . . .," "could you . . .," "I would appreciate it if . . ." expressed less directly than demands but not as indirectly as phantasy. This category includes expressions like "how are you?" "how are things in Chicago?" which are in themselves wholly social forms.

IC. *Phantasy*—"wanting" in an obviously unrealistic way by expressing a desire (for which the writer does not show a practical way of realization) (a) for the impossible, (b) of a person who obviously cannot fulfill the desire, (c) for changes in past behavior.

I 1a. *Information* (about knowledge)—"wanting" knowledge (non-emotional and non-behavioral description of people or objects), such things as age or names of people.

I 1b. *Information*—(about feeling)—"wanting" knowledge concerning some non-emotional, non-behavioral aspect of feeling, referring to such things as the reason for feelings or inquiry about their existence.

I 1c. *Information*—(about behavior)—"wanting" knowledge concerning some non-emotional, non-behavioral aspect of behavior, referring to such things as the location or time of a given behavior.

I 2. *Feeling*—"wanting" expression of like, compliments, or dislike and complaints.

2.1 *Positive*—like.

2.2 *Negative*—dislike.

I 3. *Behavior*—"wanting" another individual to act or "wanting" some event to take place.

II. *Statements*—verbal material in which the writer gives information, describes behavior or expresses a feeling, or in which the writer ascribes such a statement to another person.

II 1. *Information*—statement of knowledge; non-emotional and non-behavioral descriptions of people or objects.

II 2. *Feeling*—statement expressing likes or dislikes.

2.1 *Positive*—statements expressing likes, compliments, favorable descriptions, reassurances.

2.2 *Negative*—statements expressing dislike, unfavorable description, complaints and statements in which the writer describes states of discomfort even when no complaints are made.

2.3 *Neutral*—statements expressing neutral feeling, "fair," "average."

II 3. *Behavior*—statements describing the occurrence of an event or action of an individual.

III. *References* (verbal material concerned with each reference).

I—use of the pronouns "I," "my," "me," "mine" (references to the writer himself), and where the grammatical structure uses "I" implicitly as in "Got your letter."

Y—use of the pronouns "you," "your," "yours," and where the grammatical structure uses "you" implicitly as in command "send me. . ."

W—use of the pronouns "we," "us," "our," "ours."

T—use of the pronouns "he," "his," "him," "she," "her," "hers," "they," "their," "theirs," and "them" or any other references like names, made to people in the third person; no distinction is made between references to one or more persons.

Og—references to an organized group of people like a club, a school, a class, etc.

O—references to objects such as food, clothing, toys, furniture, buildings, etc.; the word "things" is not to be coded as object unless there is a definite reference made to an object such as "I don't have a thing to wear"; animals.

G—general references, e.g., "That's all for now."

4. *Reliability*

Reliability was computed separately for each category set, each category set comprising a different division of the entire letter. Seventeen categories (all categories but the references) were applied to 22 letters and seven other categories (the references) were applied to seven letters by the coders. Each of the seven categories (the references) were applied by three content analysts and therefore have three coefficients of reliability. Coefficients of reliability were computed in the following way for the 17 categories (the other three category-sets): The 22 letters were divided into three groups of 8, 8, and 6 letters; the first group of 8 letters was coded by two analysts, yielding one coefficient of reliability for each category-set. The other two groups of letters were each coded by three analysts each yielding three coefficients of reliability for each category-set. Table 2 presents the median and range of the reliability coefficients for each category-set.

The reliability coefficients were determined in the following manner: For each category the sum (a) of the number of words agreed to belong (by two coders) to a given category was counted. The sums for each category were combined to yield a total for each of the following category sets: I and II; I A, B, C and II 1, 2.1, 2.2, 2.3, 3; I 1a, 1b, 1c, 2.1, 2.2, 3 and II 1, 2.1, 2.2, 2.3, 3; I, Y, W, T, Og, O, G; then the number of words (b) not agreed to belong to any one category was counted separately for each category. These sums were combined to yield a total for each category set as indicated for (a). The reliability coefficient was then computed by determining what fraction of the words coded by two content analysts was agreed upon (the sum of words agreed upon summed over all categories in each category set was divided by itself plus the sum of words not agreed upon in

each category, summed over all categories in each category set) i.e. $\frac{\Sigma a}{\Sigma a + \Sigma b}$.

This coefficient can vary from 0 (no agreement) to 1 (complete agreement).

Inspection of Table 1 shows that the technique in question is sufficiently reliable to be used to make substantive conclusions. It might be noted that Category-set II appears twice in the reliability determination; this was done so as to allow each reliability estimate to be based on the same total N (total number of words of the letters).

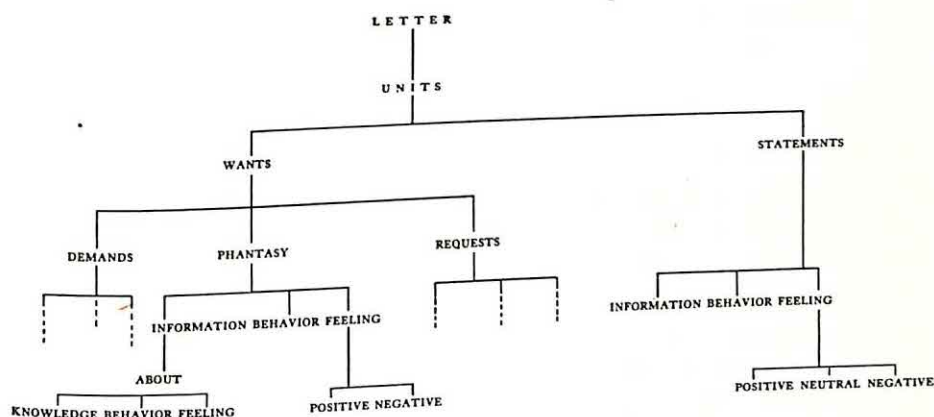


FIGURE 1

MODEL FOR THE CLASSIFICATION OF WRITTEN COMMUNICATIONS
(The dots at the end of each line indicate that the given category is further subdivided in the same way as other categories at the same level in the model.)

TABLE 1
MEDIAN AND RANGES OF RELIABILITY COEFFICIENTS (PROPORTIONS OF AGREEMENT) FOR ALL CATEGORY-SETS, BASED ON 22 LETTERS AS CODED INDEPENDENTLY BY THREE CONTENT ANALYSTS

Category-set	Proportion of agreement	
	Median	Range
Wants and Statement	.95*	.85-.99
A, B, C, II 1, 2.1, 2.2, 2.3, 3	.80*	.68-.87
I 1a, 1b, 1c, 2.1, 2.2, 3	.75*	.70-.83
II 1, 2.1, 2.2, 2.3, 3		
References I, You, We, They, Organized Group, Object, General reference†	.90**	.89-.94

†Based on seven letters.

*The total number of words on which the proportions are based is 2,176.

**The total number of words on which these proportions are based is 846.

C. RESULTS

All the letters were content analyzed by the author after reliability was established. The number of words belonging to each category for each letter were summed over all letters written by any one individual and proportions of words in each category were then computed by dividing the words in a given category by the sum total of all words in all the letters written by a particular individual. For each of the categories a non-parametric analysis of variance (10) was performed to test for the significance of the difference between the disturbed children and the children and adults in the community. Table 3 indicates the median proportion of words in each group allocated to each category; it also provides the significance level of the differences between the three groups for each category.

TABLE 2
MEDIAN PROPORTIONS OF WORDS USED BY THREE GROUPS IN EACH CATEGORY AND SIGNIFICANCE LEVELS OF DIFFERENCES AMONG THE GROUPS

Categories	Linden Hill school children (N=10)	Children in com- munity† (N=6)	Adults (N=15)	H*	Signifi- cance level
I Wants	.37	.21	.19	1.95	.40
II Statements	.63	.79	.81	2.18	.35
IA Demands	.11	.12	.08	.24	.99
IB Requests	.13	.05	.03	12.36	.003
IC Phantasy	.05	.07	.03	.81	.99
I 1a Information about knowledge	.02	.01	0	1.20	.54
I 1b Information about feeling	.04	.03	.01	5.78	.06
I 1c Information about behavior	.04	0	.03	4.71	.10
I 2.1 Positive feeling	.03	0	.02	3.27	.20
I 2.2 Negative feeling	0	0	0		
I 3 Behavior	.12	.10	.10	2.20	.35
II 1 Information	.09	.20	.13	1.65	.45
II 2.1 Positive feeling	.16	.04	.05	7.41	.03
II 2.2 Negative feeling	.13	.14	.10	1.60	.45
II 2.3 Neutral feeling	0	0	0		
II 3 Behavior	.22	.28	.32	3.66	.16
References					
"I"	.59	.62	.48	3.75	.16
"You"	.41	.35	.47	1.37	.55
"We"	.06	.05	.16	5.36	.07
"They"	.20	.32	.36	2.78	.25
Organized groups	.04	.13	0	8.54	.02
Objects	.37	.18	.21	8.00	.02
General references	.14	.12	.11	.73	.70

*The Kruskal-Wallis test (10) was utilized for detecting differences among the three groups; H is approximately distributed as X^2 with 2 df .

†Children who are not now in an institution for emotional disturbances.

Proportions were utilized in the analysis of the data in order to equate for length and number of letters written.

Inspection of Table 2 indicates that four out of the 22 categories discriminated sufficiently between the three groups so as to result in a significance level of .05 or better. If we accept significance levels of .06 and .07 as being small enough to have confidence in a difference among the groups then we arrive at a total of six tests out of 22 that discriminate between our three groups. It is clear that the disturbed children have a decided tendency to resemble both the children and adults with whom they correspond. As for the categories showing differences, the following is true: The disturbed children showed a larger proportion of requests in their letters than the children in the community who in turn showed a slightly larger proportion than the adults. The difference between the disturbed children and the other two groups remains even when the trend towards a greater number of wants for the disturbed children is taken into consideration. This was accomplished by dividing the number of requests by the number of wants for each individual; in this way we obtained the following median proportions: Linden Hill School children—.53, children in the community—.19, adults—.21 with $p = .01$ for the significance of difference. The disturbed children also showed a greater proportion of interest in information about people's feelings, with the children in the community showing the next greatest and adults least interest. Furthermore, the disturbed children expressed more positive feelings than either of the other two groups. As far as the references are concerned, the adults made "we" references more often than either of the children groups did. As for mention of organized groups, the children in the community had the highest incidence, the disturbed children next, and the adults almost none at all. Finally, it is evident that the disturbed children make reference to concrete objects more often than do either of the other two groups.

Table 3 presents some correlations between the children and their parents indicating the extent to which their letters fall into the same or different categories. Three different types of correlations have been computed for each child-parent pair. Each type of correlation makes use of a different set of categories that are independent of each other, but which, at the same time, classify the whole letter. Little can be said about the implications of this series of correlation coefficients except that there are differences in the degree to which different child-parent pairs manifest the same letter writing behavior and that the degree of similarity varies as a function of the category-set used. This last point is best illustrated in the first child-parent couple.

There would appear to be no relationship between parent and child in terms of Category-set *A* while a significantly high negative relation is evidenced in Category-set *B*. Apparently there is not much of a relationship between parent and child in the kinds of wants (phantasy, demand or request) used;

TABLE 3

RANK ORDER CORRELATIONS BETWEEN THE LETTER WRITING BEHAVIOR OF CHILDREN WITH THEIR PARENTS ON THREE CATEGORY-SETS

Children-parent couples	Category-set <i>A</i> * (<i>N</i> =8)	Category-set <i>B</i> * (<i>N</i> =11)	Category-set <i>C</i> * (<i>N</i> =7)
1	.29	-.70	.86
2	.34	.61	.76
3	.71	.49	.48
4	.68	.72	.75
5	.37	.49	.70
Correlation necessary to be significant at .05 level (two-tail test)	±.74	±.58	±.79

*Category-set *A* consists of Categories I A, B, C, II 1, 2.1, 2.2, 2.3, 3. Category-set *B* consists of Categories I 1a, 1b, 1c, 2.1, 2.2, 3, II 1, 2.1, 2.2, 2.3, 3. Category-set *C* consists of Categories of all references.

on the other hand, a negative relationship is in evidence for the objects of the wants (information about knowledge, about feeling, about behavior, etc.). Category-set *C* shows still a third type of relationship between child and parents; here there is a high degree of similarity in the people and objects discussed by parents and child.

D. DISCUSSION

This study has demonstrated that the method of content analysis employed is reliable. Discussion of the substantive results will reveal the extent of its usefulness.

Any comparison of this study with that of other verbal behavior studies must take into account the differences in the type of material sampled (e.g., spontaneous conversation vs. letter writing) as well as differences in definitions ascribed to the classes of behavior being compared. Since the literature has been concerned with egocentric statements in both children and adults, it might be worth while to compare the results in the literature with those found here.

The conclusion arrived at by Henle and Hubbell (8) that children do not differ from adults in egocentricity, appears to be corroborated by this study in which no statistically significant difference was found between adults and children in the proportion of words dealing with self ("I"). Further

comparison with the Henle-Hubbell study reveals generally greater egocentricity for the subjects in this study than for the group of presumably normal people sampled in the former. The proportion allocated to egocentricity in the Henle-Hubbell material was 40.7 per cent as contrasted with the following proportions in this study, 48 per cent for the adults, 59 per cent for the Linden Hill School children, and 62 per cent for the children in the community. It may be that the greater proportion of egocentricity found here is due to the emotional disturbance in the subjects of this study. Such a conclusion would be in agreement with the finding of Lorenz and Cobb (11) of greater self preoccupation in the speech of one of their disturbed groups (neurotic although not for their manic group) than in their normal control group. The difference found may, however, be purely a function of the different types of verbal behavior examined (conversation in the Henle-Hubbell study and letter writing in this one) and any final conclusion must, therefore, await further research.

If we accept .07 as a low enough significance level for the existence of a difference between the three groups, six categories out of 22 discriminate among our three groups. Since the large majority of categories does not discriminate, we can infer that people in correspondence with each other have a tendency to resemble each other in terms of the categories of this model. We cannot state on the basis of this study whether this resemblance in written communications holds for groups of normal children and adults; we have no reason to believe that it will not, however.

An analysis by category is of interest here. It is clear, for example, that the disturbed children express a high proportion of wants in their letters to people outside. Yet interestingly enough the people in the community do not differ from them in this quality. While the children (being away from home and having realistic needs that must be fulfilled by people in the community) might be expected to have many wants, the wants of the people in the community require further examination. Breakdown of the wants in terms of the manner of expression yields the following picture: All three groups express approximately the same proportion of demands (wants expressed directly, without any social graces like "please," etc.), approximately the same proportion of phantasy, but unequal proportions of requests (wants expressed with social graces like "please"). The people in the community express a smaller number of requests, thus the manner in which the people in the community express their wants appears to be less sociable (polite) than the manner in which the children express them. An experiment performed by Carroll and Plank (5) is of relevance here. Pairs of

Ss were placed in a situation such that one *S* had to obtain an object from another. The verbalization of each communication was recorded and analyzed in a manner similar to the demand-request classification in this study. The study showed that Ss were more prone to use the imperative (corresponding to demands in this study) when their wants benefited the other *S*, while they were more likely to use polite requests (corresponding to requests in this study) when their wants benefited themselves. It is suggested here that the community writers' wants are looked upon by them as being for the Linden Hill School's children's benefit (hence less requests by writers from the community) while the wants of the children are (realistically?) looked upon by the children as being for their own benefit (hence more requests by the Linden Hill children). In other words, the writers in the community express wants in which they ask the children to behave or feel in ways that the community writers think are best for the children; the Linden Hill School children, on the other hand, express wants in which they primarily ask for something for their own benefit.

When we examine the wants classified as to their object, we find that the disturbed children do not differ from the people in the community in any of the categories except in information about feeling; here the disturbed children appear to be more interested in obtaining information about people's feelings and welfare than those writing to them. This difference can be explained by the fact that the people in the community can give the children more information about people they both know than the children at Linden Hill can give to the people in the community. The relative order of interest among the three groups indicates that the children in the community express nearly as great an interest in people's feelings as the Linden Hill children do, or put differently that the Linden Hill children can give nearly as much information (in which the community children are interested) to the children in the community as the community children can give to the Linden Hill children (in which the Linden Hill children are interested). It must be noted, in addition, that the wants concerning information about knowledge and information about behavior tend to be larger for the Linden Hill children than for the community writers (this trend is not statistically significant, however).

As with the wants there is no statistically significant difference among the three groups in the proportion of statements made. Breakdown of the statements reveals, however, that the disturbed children express a greater proportion of positive feeling than do the people in the community. One finds the disturbed child expressing cheerful and friendly feelings in the face

of fewer such expressions from the people to whom he writes. Interestingly enough, no difference is to be found in the proportions of the letters relegated to negative and neutral feelings among the three groups. No conclusions can be drawn in the absence of a control group, as to whether the people in the community express too little positive feeling, if the disturbed children express too much, or if this difference in expression of positive feeling is to be found in the process of communication between any group of children away from home and the people at home.

Upon examining the references we find that the adults write of themselves in association with someone else (category: "we") more often than either of the two children groups. This may be explained in terms of the fact that the adults very often write as husband and wife or as representative of a whole family, thus necessitating the use of "we." The children's use of this reference (especially the Linden Hill School children) arises primarily in their references to other children (friends) or staff members at Linden Hill. It becomes clear that the "we" reference is a function of the different situations, i.e., whether the writer represents only himself in his letter or whether he writes for himself *and* others.

The children in the community manifest the greatest interest in organized groups; the disturbed children whose greater part of the day is spent as members of organized groups make reference to them only about one-third as often as do the children in the community; the adults make almost no reference to them at all. While there appears to be a difference that might be ascribed to age (difference between the children and the adults), difference in degree of maladjustment may be used to explain the discrepancy between the two groups of children. In this case, the Linden Hill School children manifest a relative lack of interest in people interacting with each other or working together in an organized group. This may well be related to the clinically observed aberrant interpersonal relations of these children.

The Linden Hill School children's greater amount of reference to concrete objects may be ascribed to their limited abstract ability. In other words, it is hypothesized here that the children tend to be concrete in their thinking. This interpretation has already been applied to these same children in a study of their academic achievement (15). Here, the fact that they do considerably worse in arithmetic than in English was interpreted to be due to the fact that the former is more abstract in nature than the latter. Before accepting this interpretation of the facts, however, it is necessary to take into account the possibility that the children may have a greater

"need" to talk about concrete objects because they must request them from the people in the community. However, while this might explain some of the children's references to concrete objects, it does not explain why there is not an equal mention of such objects by those in the community who must reply to such requests.

The parent-child correlations were presented here with the purpose in mind of indicating the direction of further utilization of this method. In this sample of the mail there were, unfortunately, not enough parent-child pair data available to do more than this. A correlation coefficient could, it would seem to us, yield an exact measure of parent-child similarity and conceivably the degree of similarity may serve to give an operational definition to the concept of identification.

A final comment concerning further uses of this method seems in order here. Further samples of the mail will be analyzed in the same manner in order to study the changes taking place in the communication process of these disturbed children who are undergoing treatment in a residential setting. Such periodic appraisals will, it is hoped, not only give information about the children, but also about the parents. These analyses may very well reflect the parent's readiness to accept the child at home as much as the child's readiness to be sent home.

E. SUMMARY

In this study an objective method of analysis of the process of written communication between a group of emotionally disturbed adolescents, and their friends and relatives was presented. All the mail written to and by the children at Linden Hill for a period of nine days was collected resulting in a group of 10 children at Linden Hill writing a total of 24 letters, a group of 6 children in the community writing a total of 7 letters, and a group of 15 adults in the community writing a total of 28 letters.

It was demonstrated that: (a) the method of analysis is reliable (coefficients of agreement varying from 75 to 95 per cent); (b) that the emotionally disturbed children resembled both the children and the adults in the community with whom they corresponded; (c) that it is possible to arrive at an index of similarity between the children and their parents by correlating proportions of verbal material relegated to each category.

The results of this investigation were analyzed separately by category and related to the appropriate findings in the literature. Some indications were also given as to possible direction of further work in this area.

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INTELLECTUAL INHIBITION AND THE SEARCH FOR SCIENTIFIC TRUTH*

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The human understanding resembles not a dry light, but admits a tincture of the will and passion, which generate their own system accordingly; for a man always believes more readily that which he prefers. He, therefore, rejects difficulties for want of patience in investigation; sobriety, because it limits his hope; the depth of nature, from superstition; the light of experiment, from arrogance and pride, lest his mind should appear to be occupied with common and varying objects; paradoxes, from a fear of the opinion of the vulgar; in short, his feelings imbue and corrupt his understanding in innumerable and sometimes imperceptible ways.

FRANCIS BACON
Aphorism XLIX
Novum Organum

A. INTRODUCTION

Since the first beginnings of scientific thought men have sought some criterion of truth which is independent of the frailties and vicissitudes of human need and volition. During the early days of measuring intelligence there arose a belief that somehow the "intelligent man" would lead us to this goal, or at least, that his intelligence qualified him as the most able, the most appropriate seeker. But in 1948 Terman (44) concluded his study of the gifted child with this statement.

At any rate we have seen that intellect and achievement are far from perfectly correlated. Why this is so, what circumstances affect the fruition of human talent, are questions of such transcendent importance that they should be investigated by every method that promises the slightest reduction of our present ignorance. So little do we know about the available supply of potential genius, the environmental factors that favor or hinder its expression, the emotional compulsions that give it dynamic quality, or the personality distortions that make it dangerous.

Since that time Gough (17, 18) has clearly demonstrated the importance of certain personality characteristics for scholastic achievement. Many other writers, particularly the followers of Freud, have indicated the effect of certain needs and early frustrations in shaping the direction and even the

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quality of intellectual functioning. An impairment of intellectual functioning due to one's emotional problems has frequently been described as an "intellectual inhibition" (23). However, there is considerable question about the meaning of the word "inhibition." Is one's intellectual functioning "inhibited" if he does excellent experimental work in his own field, but is unable to see the broader implications of his own findings? Is his intelligence "inhibited" if he had an *IQ* of 160, understands American psychology, but is unable to appreciate the value of the different approach presented by the German gestaltists? Is an "eclectic approach" an indication of greater objectivity or indecisiveness? Obviously there have been examples of *eclectic people* who would fit both descriptions.

The truth which scientists seek is not something which lies dormant, waiting to be discovered. The atomic theory, relativity, and psychoanalysis are not concrete objects which are scratched from the intellectual soil like uranium. They are products of human creativity, and, as such, they are dependent upon the intellectual ability as well as the objectivity of the discoverer. But if this were all they represent, there would be no way of verifying these theories. They are all theories about reality and, in the last analysis, they must tell us something about our world—something which enables us to predict or control our environment to a greater degree—or they will not stand the test of time.

If a theoretician is sufficiently flexible, he can modify his theory in response to appropriate criticism. For example, compare the first edition of Darwin's *Origin of Species* with the last edition during his lifetime in which the corrections and the critical thinking of other naturalists have been incorporated. Yet, even among our most able and creative thinkers there exist great barriers, major intellectual inhibitions that stand in the way of scientific objectivity. John Dalton, the man who originated the first atomic theory, showed a rigid and negativistic stubbornness in his refusal to acknowledge the discovery of Gay-Lussac that gases combine in simple ratios. He could not accept it because it could not, at the time, be reconciled with his own atomic theory which did not include the concept of a molecule (20). Certainly a "vested interest" in a particular idea is a major barrier to objectivity. Murphy (29) has pointed out that the thinking of many gifted individuals can be influenced by the autistic orientation of a sub-culture, a national stereotype, or a perceived rôle.

The need to describe a phenomenon from a single point of view and to exclude alternative explanations is nowhere more evident than in the typical staff conference in a mental hospital or clinic. Many arguments are

advanced to explain the behavior of a patient and to place him in the proper diagnostic category. As the various staff members contend with one another, one often feels that the patient has been lost in the shuffle of ideas, and that the primary motivation of the participants is not the understanding of the patient, but the self-aggrandizement of the speaker. The winner frequently turns out to be that individual with a greater verbal fluency and aggression than his fellows. Yet it would seem from conversations with these same participants before the staff conference begins that each is interested in the welfare of the patient, that each would genuinely like to know more about him, and that he is coming to the staff conference to enrich his understanding.

What, then, is the problem? The phenomenon in which the prestige need of the individual interferes with the satisfaction of his cognitive or curiosity need is a familiar one in psychology (45). Certainly such factors as being the "chief" of the clinic staff are important in structuring the situation so that one feels he must make an "important contribution" to the discussion. In this sense one's rôle may actually impair his ability to think in unusual or original channels. Yet, it is the chief's job to provide leadership, structure, and a frame of reference for his staff. If he fails to do this in his effort to keep an "open mind" to every idea, he might be accused of failing in his integrative capacity and, thus, not functioning at his full intellectual potential.

An examination of some of the specific instances of intellectual inhibition as well as some studies in this area may throw further light on this general problem. Some types of intellectual inhibition have received extensive treatment in the literature and will be briefly mentioned. Others will require more discussion. While the various types of intellectual inhibition described in this article are neither clear-cut nor mutually exclusive, they are illustrative of the multiple sources of error in the functioning efficiency of this intervening variable which we call intelligence.

B. NEUROTIC INHIBITIONS

1. *Specific*

There are a number of cases in psychoanalytic literature in which a given problem is related to a specific unconscious conflict of the individual. Flügel (9) presents the case of a student whose castration complex and sadistic fantasies had been aroused by a certain mechanical problem that was presented to him, causing him to give, at first, a wrong solution to the problem. Klein (23) reports a case in which a boy was unable to distinguish between

three French words because they all reminded him of his fear of destroying his mother's body. "The ego tries to demonstrate its independence from objects in the outer world by refusing to be influenced by them—even to the extent of recognizing them."

2. General

General difficulties in thinking or intellectual curiosity may be related to earlier difficulties concerning sexual curiosity or eating. This has been suggested by Fenichel (8). Oberndorf (30) also points out that difficulty in thinking may frequently be due to erotization of thought. "If sex is forbidden, so is thinking about sex, or thinking in general." Weisskopf (47) suggests that this erotization of thought is the basic fallacy in the parental attitude that if curiosity about sexual matters is suppressed, children will turn their thinking to "more wholesome and constructive matters."

Weisskopf (47) has summarized some of the problems underlying inhibition of intellectual functioning and presented a wealth of illustrative case material. One of her cases, an 18-year-old girl referred for therapy because of academic failure, was urged by her ambitious mother to be a social and academic success. The girl could not express open hostility to her mother, but expressed her resentment by blocking in the two activities which were most important to her mother. Weisskopf discusses the various types of intellectual inhibition in which the gains (masochistic satisfaction, punishing the parent, etc.) are directly related to the lack of intellectual functioning. She also points out that intellectual inhibition may result from the *displacement* of attitudes toward oral and anal impulses upon intellectual processes. "Learning is similar to drinking and eating inasmuch as it is an intake and assimilation process. In reading and in listening to lectures, knowledge is taken in and assimilated. Intellectual activity is also a giving-out process, and as such it resembles defecation" (47). It frequently happens that the guilt connected with these pregenital sexual activities is also displaced onto the intellectual work, thus interfering with effective cognition. Schmidberg (38) tells how a girl who had been forced by her parents to eat everything later felt compelled to study everything in school and felt guilty whenever she preferred one subject over another.

3. Anxiety

The numerous cases of "examination fever" suggest that certain individuals react with emotional tension or anxiety to an intellectual challenge and suffer a consequent loss of intellectual controls. There is considerable

individual difference in the ability to maintain intellectual controls under stress. Williams (49) found that if poor integration of form with color and poor form quality are both indicated from an individual's Rorschach protocol, he is likely to show a greater decrease in his functional efficiency (on the Digit Symbol test) under stress conditions than an individual with a high FC% and a high F+%. Following the work of Williams there have been a number of investigations in this same general area. Carlson and Lazarus (4) repeated Williams' experiment and got negative results. Cox and Sarason (5) have summarized some of the work on intellectual impairment under stress. They worked on the problem from a somewhat different standpoint. First they selected subjects with strong anxiety drives and with low anxiety drives by means of a questionnaire. Then they used the Rorschach testing situation as the stress situation. They used a score derived from the Rorschach anxiety signs as a measure of test anxiety. Their findings supported most of the usual Rorschach indices of anxiety. It appeared to make no difference when some of the subjects were given standard Rorschach instructions and others were told that the Rorschach was an intelligence test. The anxiety-prone subjects obtained significantly higher scores on the anxiety indices in both situations. It would seem that the experience of being tested, regardless of what the test was supposed to measure, was sufficiently stressful to elicit the anxiety signs. A study by Mandler and Sarason (25) has shown that high anxiety does not necessarily depress intelligence test scores unless the subject believes he is failing.

In reviewing these studies it is clear that test scores can reflect only the present intellectual efficiency of the subject being tested and that personality factors and socio-economic status (37) can exert a potent influence on one's readiness to respond with anxiety and impaired intellectual efficiency to a "test" situation.

C. CHARACTER INHIBITIONS

1. *Autism*

There is a strong tendency on the part of the highly indoctrinated (instead of educated) individual to refuse to see the other person's point of view in order to protect his own set of values or his pet theories, which have become essential props to his self-esteem. It involves the understanding of a problem from the point of view of an American, a psychologist, or a behaviorist without recognizing that there are other solutions to the same problem which might be equally valid or useful. Murphy (29) has indicated that such a narrowing of the intellectual focus can be a major barrier

not only to intellectual functioning but to international and intercultural understanding.

In many cases of great intellectual achievement the quest for knowledge may serve as a means for working through one's own unconscious problems (34). While intellectual functioning may be intensified in certain areas, the strong affective push given to the intellectual mechanism makes steering difficult. There is a deep ego-involvement in one's findings and a consequent resistance to evidence which might throw doubt on one's hard-won conclusions. Kanzer (21) gives an impressive description of the manner in which unconscious needs and conflicts have colored the thinking of scientists. He presents illustrative examples from the works of Kepler, Galileo, Newton, and others to show that there was a strong need to call on other sources of conviction, besides pure reason and observation, to support their views.

2. *Rôle Conformity*

A person's objectivity can be impaired by an excessive willingness to accept the point of view of an "expert" as more valid than one's own. The striking effect and ready use of testimonials in advertising offer examples of the numerous attempts to take advantage of the rôle of the "learned man." In like manner the originality and individuality of a professional person is seriously impaired by his need to model himself after the national concept of the "professional physician," "professional lawyer," or even the "professional artist." In the world of art there is a tendency to be a kind of professional non-conformist merely because the artist is expected to be "different." A studied eccentricity which is based on the expectations of others is the height of conservatism. It indicates a desire to conform rather than a freedom to vary.

The need to be "like others" or "normal" is another potent factor in shaping the rôle of an individual. It may interfere with the intellectual functioning of an otherwise capable thinker by dampening the boldness and adventurousness of his speculations. In an experimenter it may become manifest as an undue hesitancy about reporting unexpected results. The intense desire of Alberto Moravia's character, Marchiello, to be a "normal man" is a masterful and detailed description of the needs which may drive a certain type of individual toward a restricted rôle in which he can find security.

Sherif (41) demonstrated experimentally the tendency of the inexperienced subject to follow the lead of someone he regards as an "expert." In his investigations with the autokinetic effect Sherif found that the need of an

untrained observer to "see as a trained observer" was the chief dynamic in his perception. Crutchfield (7) has followed up the early work of Sherif and offered some rather convincing evidence that the tendency to conform to the opinion of others, to function as the "average man" in a group, serves to interfere with the expression of one's full intellectual potential. He measured the degree to which an individual's response to an experimental situation is influenced by his knowledge of the group response. Using this measure, he devised a conformity score which correlated $-.63$ with "intellectual competence" as rated by his assessment staff. Conformity also showed a negative correlation with estimates of leadership ($-.33$) and ego strength ($-.30$). However, Goldberg (14) has noted that the need to conform to the opinion of a specific group may operate regardless of one's character structure. He has demonstrated the operation of three situational determinants of conformity which appear to be independent of any personality characteristic of suggestibility or conformity.

Goldberg's findings would suggest that, if we live in a culture, we must all conform to some extent. Indeed the need to relate one's self to some kind of rôle is part of the development of the self concept in every healthy individual. Then what is there about the playing of a rôle which can impair one's intellectual functioning? How can one obtain some of the security of playing a rôle without becoming a prey to the dangers? Perhaps the best answer to this question is that the healthy assumption of a given rôle is one which allows the greatest number of degrees of freedom (freedom to vary) in one's behavior. A rôle can give one a feeling of assurance and status in a society or it can become a straight jacket in which one's behavior is so carefully regulated that only minimum variability is allowed and spontaneity is stifled. One student who wants to become a college professor may spend many hours of study in the library and attempt to find answers to the abstract problems which concern his teacher. Another student with the same goal may adopt the manner of an expert, being quick to answer all questions in an authoritative and brisk fashion, but refusing to ask any questions since this is beneath his dignity as a learned man. Such a rigid conception of the rôle of the college professor closes the doors to knowledge and impairs one's efficiency in attaining the desired goal. It is an other-oriented conception of the rôle, calculated to impress an audience and designed for immediate satisfaction. In the case of the first student the rôle has become more of a genuine identification. It is enacted for certain inner satisfactions of the student and becomes a more integrated part of the self.

3. *Inability to Delay Gratification*

Freud (12) stated that, in the thinking of many individuals, the pleasure principle is in conflict with the reality principle in the search for knowledge. The attempt to free one's self from the dereistic thinking of childhood is further complicated by potent cultural factors. As Fromm (13) has pointed out "... freedom *from* the traditional bonds of medieval society, though giving the individual a new feeling of independence, at the same time made him feel alone and isolated, filled him with doubt and anxiety, and drove him into new submission and into a compulsive irrational activity." This is the basis of the intense need for certainty which dominates the thinking of many modern intellectuals and which frequently results in a return to religion for a satisfaction of this need. In the words of Gilbert Murray there is a "failure of nerve," a final break in the capacity to tolerate ambivalence, a need for a resolution of the nagging doubts that plague the modern mind.

One of the characteristics of the scientific attitude is the willingness to accept doubt and uncertainty, to take a critical approach to all pat explanations and to exhaust the alternative hypotheses concerning a phenomenon by careful experimentation. This general attitude of scientific scepticism is as important in the practice of psychotherapy as it is in the construction and evaluation of psychological theory. The caution and sophistication with which the modern psychoanalyst approaches the most sacred of the master's (Freud's) pronouncements is as refreshing as it is recent. It is an easy matter to find a "great leader" to whom one adheres with loyal devotion, but it is quite another thing to recognize inconsistency, to make revisions and correct certain errors, to accept with an ironic patience the limitations of the human intellect.

D. PREVIOUS TRAINING

While the emotional experiences of early childhood are certainly important factors in determining the functional efficiency of one's intellect, the later intellectual experiences also play an important part as well. The effect of guidance in the learning process has long been known in psychology (27). There are a number of indications that an education which prepares an individual for a more variable and general response, which takes into consideration the wider number of possibilities, is the more adequate for most life situations. Schroder and Rotter (40) have demonstrated this point by giving a quite restricted sorting task and a more variable sorting task to matched groups of subjects. Those subjects who were given the more variable tasks performed better in a test situation which involved highly complex behavior

in card sorting. They pointed out that "non-rigidity is a higher level of behavior which consists of expecting change and looking for alternate pathways." Forgays and Forgays (10) have shown that by simply permitting rats greater freedom in terms of living area these animals were superior in problem solving as compared with animals that did not have this increased living area.

Max Wertheimer, in his excellent chapter on the principles used in the solution of the area of a parallelogram (48), has shown the effectiveness of this general idea. If a student is able to see a concept, not only as it applies to the solution of certain practical problems, but in its broader or more general meaning, his breadth of vision is, itself, increased and his understanding is more profound. Such understanding comes about by encouraging independent thinking in students and discouraging reliance on such automatic devices as formulae. If a student solves a problem and gets the correct answer, but yet is not satisfied with his solution because he does not understand the inner relationship of the various parts of the formula; if he can obtain a solution by following a rule, but is not satisfied until he knows how the rule works; then he has obtained not only technical skill and facility, but has developed a type of intellectual curiosity which leads to a more extensive and profound use of his basic intellectual ability. Certain teachers and certain educational philosophies encourage this attitude in a child and others actually tend to stifle it. There are some pedagogues so infatuated with their own words that they delight in seeing them repeated on examination papers. Such men regard any individuality on the part of their students as a sign of impudence and a refusal to learn "the right way." The ability of a good teacher to discover and encourage that spark of imagination and initiative in a student presupposes that he is not himself encumbered by intellectual inhibitions, that he does not believe there is only "a right way" and "a wrong way" of solving a problem or approaching a new subject, that he is not blinded by subtle, personal autism.

E. MOTIVATIONAL FACTORS

1. *Lack of Motivation*

The relatively low *IQ* and impaired creativity of institutionalized children has frequently been noted (1, 2, 15, 16, 43) as well as a number of instances in which special attention, improved rapport, foster home placement, etc., have brought about a marked improvement of *IQ* (35, 42). While some studies of this kind have been severely criticized (22, 39, 50) sufficient evidence remains to indicate that environmental factors can have a decided

effect on the *IQ* (36). Among the early indications of intellectual growth in an infant is a greater awareness of and responsiveness to his surroundings, particularly to the mother. A loving and attentive mother will tend to foster this increased awareness at a time when it is most crucial for the child, whereas the lack of love means the absence of one of the most potent sources of intellectual as well as emotional growth (32, 33, 47).

Lack of motivation of a certain kind may also be responsible for the frequently observed discrepancy between the verbal and performance *IQ*'s of juvenile delinquents (31, 46). From this writer's examination of a large number of delinquent youths the motivational factors appear quite evident. The delinquent youngster, in general, does not place a high value on verbal ability. He tends to look down on academic success and to regard as more important the mechanical, musical, or other non-language abilities. Shrewdness and cleverness, understanding jokes, or non-verbalized relationships between objects interest him much more than the "proper" answer required by the question, *Why should we stay away from bad company?*

Recently this writer was examining an 18-year-old boy from the Oakland Bay Area who had been arrested for burglary. He had previously been given a paper and pencil intelligence test which stressed verbal ability. His test intelligence was in the lower half of the Dull Normal range; yet he was an active, alert youngster whose casual remarks suggested that he might be capable of functioning at a higher level. As we began to talk about his offense the boy gave the following explanation of his activities.

B: I needed some bread (money). That's why I got busted (arrested). All I needed was a lousy four bucks.

Ex: Why did you want it?

B: I had to see Joe Huston.

Ex: Who is Joe Huston?

B: (Beating an imaginary drum with his hands.) Joe Huston, Joe Huston! You know, Man!

Ex: No, who is he?

B: (Becoming annoyed.) Joe Huston, Man! You know, Man! Everybody knows Joe Huston! (Still beating the air violently.)

Ex: I've never heard of him.

B: (With considerable irritation.) *Drums, Man, Drums!* Joe Huston! Drums, Man. You know! (Beating continues at a frantic pace.) He might have added, "You fail *my* test!"

Clearly the expression, "lack of motivation," is not adequate to describe this behavior. What we have here, in more specific terms, is a rejection of middle-class values. Our society places a high value on evidences of superior

intellectual functioning, particularly verbal ability and abstract reasoning. Consequently, this is the area in which the delinquent makes his most significant failure.

One has but to observe the home of the delinquent child to find the source of this difficulty. The demand for conformity, in the generally authoritarian attitude which characterizes the parents of so many delinquent children, tends to discourage efforts at individual or creative thinking. A passive negativism, a failure to ask questions for fear of ridicule, a general restriction of the variety and intensity of interests is the usual result of this type of environment. A fatalistic shell is built around the child and he soon learns not to question things that "don't concern him." The inconsistency and arbitrariness of his parents' rules lead him to believe that there is no way he can learn what is "acceptable behavior." Consequently, he tends to blame his problems on "luck" or "fate" (6). Like his parents he learns to ridicule people who ask questions and regards them as "squares." Intellectual growth is stifled in such an atmosphere. The facade of "being in the know" becomes a substitute for genuine intellectual curiosity.

2. Conflicting Needs

Tolman's (45) discussion of situations in which other needs of an individual interfere with his cognitive or curiosity needs has been mentioned previously. If a professor is attempting to plan a lecture for his class or design an experiment which may have some sociological implications, he may well look with a cautious eye to what others may think of his work. The parents of students (who frequently happen to be the alumni of the university) and those who grant funds for investigations can make their opinions felt in the pocketbook of the professor. Such influences on intellectual motivation, even if they do not succeed in distorting the results of an investigation, invariably divert the energy of the investigator. All too often, however, they succeed in altering the plans for an investigation, limiting its scope, or completely suppressing the findings.

However, the recognition and reaction to a "clear and present danger" is not the most serious aspect of this type of political climate. It is where the pressures of other needs, particularly the need to preserve one's self-esteem, interferes with the very mechanism of cognition that the intellectual inhibition is most devastating. No man likes to admit, even to himself, that he has "backed down in the face of pressure." The need to remain "true to one's ideals" and still maintain one's capacity to support a family sometimes places one in a situation of acute conflict, a conflict that can only be

resolved by some extensive and involved rationalization. Once having made the decision, it is easier to hide from the truth the next time. Being "reasonable" one must now be "consistent" and stick by his rationalizations or his failing self-esteem will topple completely. The need to think along acceptable channels cannot but affect his originality and his creativity.

In recent years there is a growing tendency to look more carefully at social and psychological reasons for the popularity and general acceptance of certain scientific theories. As Frank (11) points out, "The special mechanism by which social powers bring about a tendency to accept a certain theory depends on the structure of the society within which the scientist operates. It may vary from a mild influence on the scientist by friendly reviews in political or educational dailies to promotion of his book as a best seller, to ostracism as an author and as a person, to loss of his job, or, under some social circumstances, even to imprisonment, torture, and execution." The field of physics is, at present, relatively free from the former attacks by church dignitaries, but genetics in Russia has been hopelessly entangled in Marxist ideology, and the social sciences in every country are subject to strong political pressures. Moore (28) has pointed out that the doctrine of dialectical materialism has a strong bias against formal and abstract thinking in general.

F. OVERCOMING INTELLECTUAL INHIBITION

The problem, as it emerges from this data, is no longer one of intelligence (in the limited sense in which this word is usually understood) but resembles what has often been called "good judgment" or "mature appraisal of a situation." How can we encourage the development of such an appraisal? It is the goal of psychoanalysis to develop greater control over unconscious and irrational impulses by allowing a greater awareness of them, and thus making them subject to reason. This would certainly lay the foundation for emotional maturity. However, lest the reader conclude I am merely stating that "mature people" make the best scientific investigators and that the only way to philosophical truth is through psychoanalysis, I must hasten to point out the difference between the good judgment, wisdom, and maturity of thought in John Milton's *Areopagitica* and the narrow-minded selfishness which characterized his relationship with his wife and daughters.

The history of science is filled with the works of scholarly, schizoid individuals like Newton and Kant who were capable of brilliant and objective scientific and philosophical works, but who would hardly be called "mature" by the genitally oriented psychoanalyst. It is possible to be imper-

sonal about problems if they can be structured outside the domain of one's defenses. It is the business of science to make such refinements of structure if scientific problems are to be solved.

Actually, the structuring of a problem is the first and, in many respects, one of the most important steps in its solution. It is this first step, where the problem is still rather vague and undefined, that is the most vulnerable to intellectual inhibitions. Guilford (19), in his studies of creativity, has isolated a factor which he calls "the ability to structure a problem preparatory to solution" and he points out that this factor is essential to creative thinking. The effective statement of a problem requires that the investigator be able to see the broad issues involved, that he understand his problem in its relationship to other fields of knowledge rather than view it from the restricted frame of reference of a particular specialty.

Some methods have already been devised for achieving greater ego-distance from scientific problems. Einstein made effective use of a mathematical approach to objectivity when he employed tensor calculus in the development of his theory of relativity. He thus enabled the physicist to escape the autistic and restricted view offered by only one frame of reference (his own particular coördinate system). Korzybski applied the general principles of the theory of relativity to language in his development of General Semantics (24). The Operationism of Bridgman (3) is also derived from the same general idea—the structuring of a problem in such a way that it is independent of the frame of reference of the investigator. Hence Operationism emphasizes the need of recourse to instrumental procedures when meanings are to be established (26). These philosophical and theoretical devices have in common a general distrust of conventional meanings and traditional approaches to problems. They propose a more impersonal, less connotatively colored attitude. What is more they suggest some concrete means of achieving such a goal.

The examples presented in this article are only a few of the various manifestations of intellectual inhibition. It is evident that some suggestive attacks have already been made on the problem. The tacit assumption of a governing intellect, independent of affective influence and capable of making "objective" judgments is rapidly fading. The pressures of the relative values from the multiplicity of value systems, personal and cultural, must be recognized if we are to deal with them. We have only begun to wrestle with our ignorance and we have not yet arrived at a tensor calculus of values, but certainly the tools for conquest are in our hands.

G. SUMMARY

A description of the problem of intellectual inhibition has been followed by a brief outline of the principal manifestations of intellectual inhibition and a discussion of some of the methods that have been devised for overcoming this problem. The implicit awareness of affect-impulse factors influencing cognition has been indicated in scientific literature since the time of Francis Bacon, yet many scientists, including psychologists, have ignored this phenomenon. It is only when we make the problem explicit by description and definition that we can begin to understand it and answer it.

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THE UTILITY OF THE SHEVKY TYPOLOGY FOR THE DESIGN OF URBAN SUB-AREA FIELD STUDIES*¹

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A. PURPOSE

The community study, whether executed in farm areas, small towns, or urban centers, has long been a source of important contributions to sociological theory and method. Recently Conrad Arensberg (2) has pointed out the larger utility of the community-study method as an approach to many challenging problems of social psychology and social anthropology as well. Very often because of the nature of the research problem, the particular interest of the research worker, or the restriction imposed by time and money limitations, some particular sub-area within a larger complex community will be selected for intensive study. This has been particularly true of community studies which have been executed within the larger context of some urban area. Many of the Chicago community studies, such as those of Anderson (1), Thrasher (13), Wirth (15), and Zorbaugh (17), for example, would fall into this category, as would more recent studies of urban neighborhoods such as those conducted by Foley (7) and Whyte (16). In these studies, as in others, some particular type or types of urban neighborhoods were selected for study from among the many different types of neighborhoods in a particular city which might have been selected.

To date these urban sub-area studies have yielded a large body of information which represents an important element in the substance of sociological knowledge. Social life in a Jewish enclave, informal organization in an Italian slum, social control in Gangland, local community identification in a middle class neighborhood, and other phenomena have been the subject of detailed investigations. However, one is led to ask in each case exactly in what type of neighborhood was the study conducted? How many more

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types are there like this in the city? In what systematic ways does the neighborhood studied differ from other neighborhoods in the city? Where does it fit into the larger social system of the city as a whole? If these questions could be answered, the significance of the generalizations emerging from studies of particular sub-areas within the larger urban frame may be enhanced.

An urban typology, originally constructed by Shevky and Williams (12) and recently modified by Shevky and Bell (11), may offer a solution to such questions. The purpose of this paper is to investigate the analytic utility of the Shevky typology by exploring its use in the design and analysis of urban sub-area field studies. The data to be used as illustrations were collected in certain communities in the city of San Francisco in the Spring of 1953 in connection with a project designed to determine the extent and nature of social participation and isolation in urban communities. However, this paper is not intended to report the substantive findings of the study, rather it is intended to discuss the chief methodological features of the study. Specifically, does the Shevky method for the analysis of census tract statistics for a city provide a frame within which detailed investigations of the social relations in sub-communities within that city can be designed and executed? If so, what is the function of the Shevky typology for such studies?²

B. THE SHEVKY TYPOLOGY

The Shevky urban typology is a classificatory device for the construction of social types of census tract populations. Three major components are used in the typology. These are economic status, family status, and ethnic status, and the social area types consist of census tract populations having similar configurations of scores with respect to these dimensions or factors.³ As shown in Figure 1, a property-space is constructed using the dimensions of economic status and family status as coördinates.⁴ Then each of the two

²This paper is focused on the methodological aspects of using the Shevky typology as a frame for the design and analysis of urban field studies. For a more complete discussion of the *findings* of such studies see Bell (3a), Bell and Force (5, 6, 6a), Bell and Boat (4), and Greer (8).

³The names given the three dimensions in Shevky's original work were social rank, urbanization, and segregation. However, the writer prefers the alternative terms of "economic status" for "social rank," "family status" for "urbanization," and "ethnic status" for "segregation." The only change necessitated by the use of the alternative terms is that each census tract's urbanization score must be subtracted from 100 to achieve the family status score since high urbanization equals low family status.

⁴The index of economic status consists of measures of occupation and education; the index of family status consists of measures of fertility, women not in the labor

continua are divided into four segments which results in 16 social area types of census tract populations with respect to economic status and family status. A number and letter designator are given to each of these types as shown in Figure 1. Social area 1D, for example, contains tract populations having low economic status (i.e., relatively many persons over age 25 who have completed grade school only and relatively many persons who are craftsmen, operatives, or laborers) and low family status (i.e., relatively low fertility ratios, relatively many women over age 16 in the labor force, and relatively few single-family detached dwelling units). Tract populations contained in social Area 1A would have the same economic status as those contained in 1D, but the family status of tracts in 1A would be

FAMILY STATUS	High	1A	2A	3A	4A
		1B	2B	3B	4B
		1C	2C	3C	4C
	Low	1D	2D	3D	4D
		Low		High	
		ECONOMIC STATUS			

FIGURE 1
SOCIAL AREA KEY BASED ON ECONOMIC STATUS AND FAMILY STATUS

high instead of low (i.e., relatively high fertility ratios, relatively few women over age 16 in the labor force, and relatively many single-family detached dwelling units). Likewise, social Area 4D varies systematically from 1D, but in this case the family status of the two groups of census tracts is the same while the economic status differs. Social Area 4D contains tract populations with low family status, but with high economic status (i.e., relatively few persons over age 25 who have completed grade school only and relatively few craftsmen, operatives, and laborers). Thus, each type of social area delimits a group of census tracts which have a particular configuration of scores with respect to economic status and family status.

The third dimension, ethnic status, is added to the typology by distinguishing between those census tracts which contain relatively many members of force, and single-family detached dwelling units. Precise definitions of these variables and procedures for the computation of standard scores can be found in Shevsky and Bell (11).

American racial and nationality groups which have traditionally held subordinate positions in the United States and those census tracts which contain relatively few members of these groups. The former are designated as having high ethnic status and the latter are designated as having low ethnic status. Tract populations of a particular type which have high indexes of ethnic status are given an "S" along with their designator as determined from Figure 1, and tracts which have low indexes of ethnic status remain with only the designator as shown in Figure 1. Thus there are 32 possible types of social areas: 1A, 1B . . . 4D and 1AS, 1BS . . . 4DS.

C. DESIGN OF THE STUDY

One of the methodological concerns of the field study of social participation and isolation in urban communities, partially reported here, was to select the particular sub-areas of the city to be studied. This was accomplished with the aid of the Shevky social space diagram given in Figure 2. This figure shows the position of each of the 244 census tracts of the San Francisco Bay Region plotted with respect to their scores on the indexes of economic status, family status, and ethnic status as of 1950.

From an examination of Figure 2, certain general statements concerning the internal social differentiation of the Bay Region population can be made—such as those referring to the range of the census tracts with respect to the

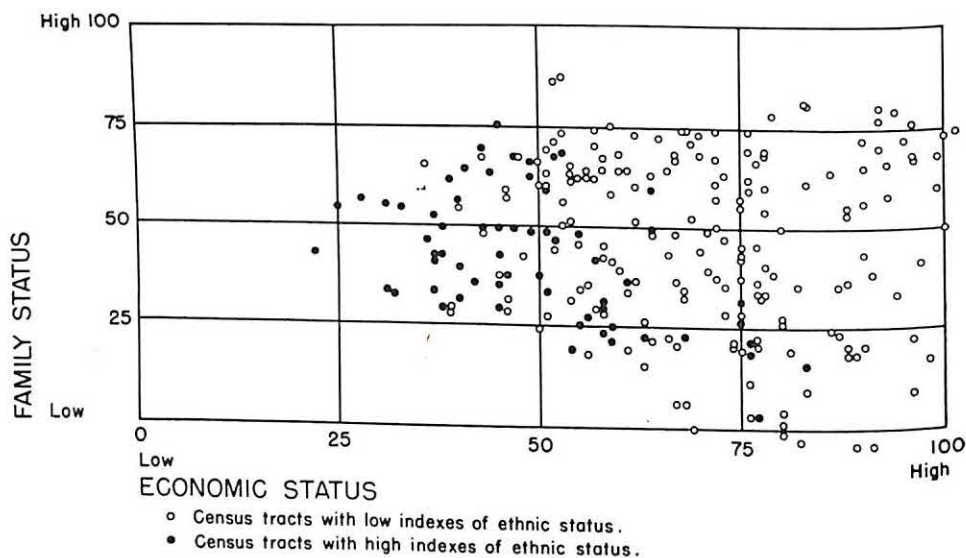


FIGURE 2
DISTRIBUTION OF THE CENSUS TRACTS IN THE SOCIAL AREAS OF THE SAN FRANCISCO BAY REGION, 1950

three dimensions, the relations between the three dimensions, the relative distribution of the population in the social areas, etc. However, another aspect of the typology is exploited in the selection of the urban neighborhoods for intensive study. This is that important aspects of the social character of each tract population can be seen in relation to the over-all social space distribution of all the tracts in the Bay Region.

By inspection of the social area distribution shown in Figure 2, it was possible to select census tract populations for the field study which had the desired social characteristics in terms of meeting the research objectives. Since it was decided to hold ethnic status constant as far as possible by dealing only with tract populations containing few members of American subordinate groups, tracts with high scores on the index of ethnic status were eliminated from consideration as possible study tracts. On the other hand, one of the purposes of the project was to investigate the factor of family status as a dimension of stratification and as an independent variable in accounting for the social isolation of urbanites, so tract populations with widely different scores on the index of family status were selected. Also it was desired to investigate the factor of economic status in relation to degrees of social isolation, so tract populations with widely different scores on the index of economic status were selected.

The social space positions of the four tracts finally selected for intensive study are shown in Figure 3 along with their census tract designations and

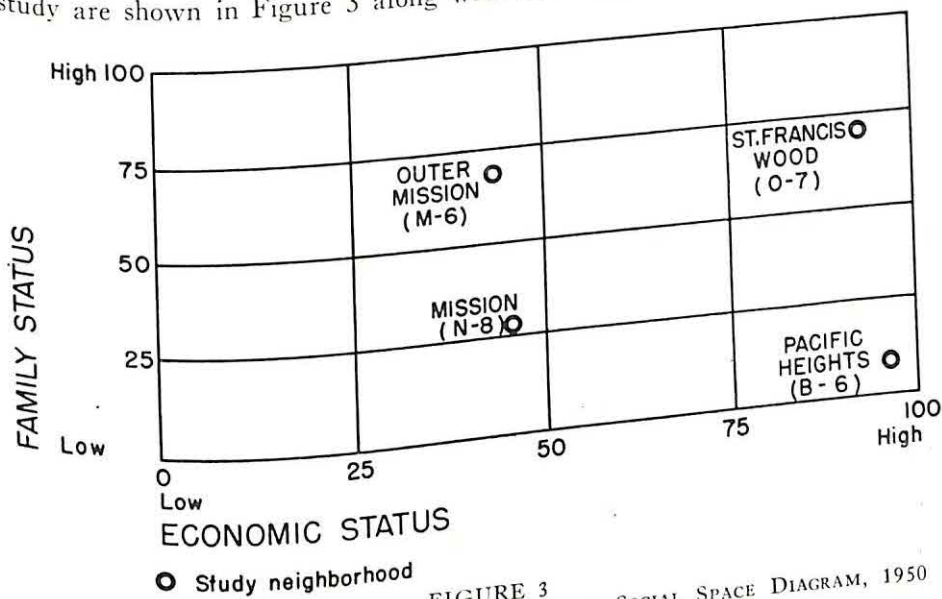


FIGURE 3
THE FOUR STUDY CENSUS TRACTS LOCATED IN THE SOCIAL SPACE DIAGRAM, 1950

their identifying neighborhood names. Each of the study tracts is located in the city of San Francisco, and each has a low score on the index of ethnic status. Relative to the ranges on the indexes in the San Francisco Bay Region, the Mission neighborhood is characterized by *low* economic status and *low* family status; the Pacific Heights neighborhood by *high* economic and *low* family status; the Outer Mission neighborhood by *low* economic and *high* family status; and the St. Francis Wood neighborhood by *high* economic and *high* family status.⁵ Thus, four census tract populations were selected for intensive study each having a different social character.

As indicated above, the Shevky typology, unlike ecological analysis, locates neighborhoods in social rather than in geographical space. However, the geographic space frame was used to provide important additional information concerning the nature of the study neighborhoods. Figure 4 contains a map showing the geographic location of the four study tracts in relation to several broad categories of land use. This map shows that Pacific Heights and Mission are both located near the downtown business district in areas often considered most typically "urban," and have no major adjacent park facilities. St. Francis Wood and Outer Mission, on the other hand, are located much farther from the downtown business district near the southern boundary of the city, and both are near major park facilities. Pacific Heights is similar to St. Francis Wood in being located in a more desirable area, Pacific Heights having a view of the Golden Gate Bridge and St. Francis Wood offering but a short drive to ocean beach areas. Mission and Outer Mission are both located close to the less desirable industrially occupied inner Bay.⁶

D. DESIGN OF THE ANALYSIS

After the selection of the study tracts, as described above, probability samples were drawn from a complete list of all the dwelling units within each tract. A total of 701 hour-long interviews were obtained which were about equally divided among the four tracts and which represent a total response

⁵The districts known as Outer Mission, Mission, and Pacific Heights are larger than the particular census tract studied in each case. Thus the tracts studied are contained within the larger named place. This is not true, however, for the district known as St. Francis Wood. Census tract 0-7 contains several named neighborhoods in addition to St. Francis Wood, such as Lakeside, Ingleside Terrace, Balboa Terrace, Davidson Manor, and Monterey Heights. These districts, however, have the same general social configurations as does the St. Francis Wood district. For convenience the entire census tract was given the identifying neighborhood name, "St. Francis Wood."

⁶For other examples of the use of the Shevky typology for the design of urban area field studies are Greer (8) and Williamson (14).

rate in excess of 85 per cent. One male over age 21 in each sample dwelling was interviewed.

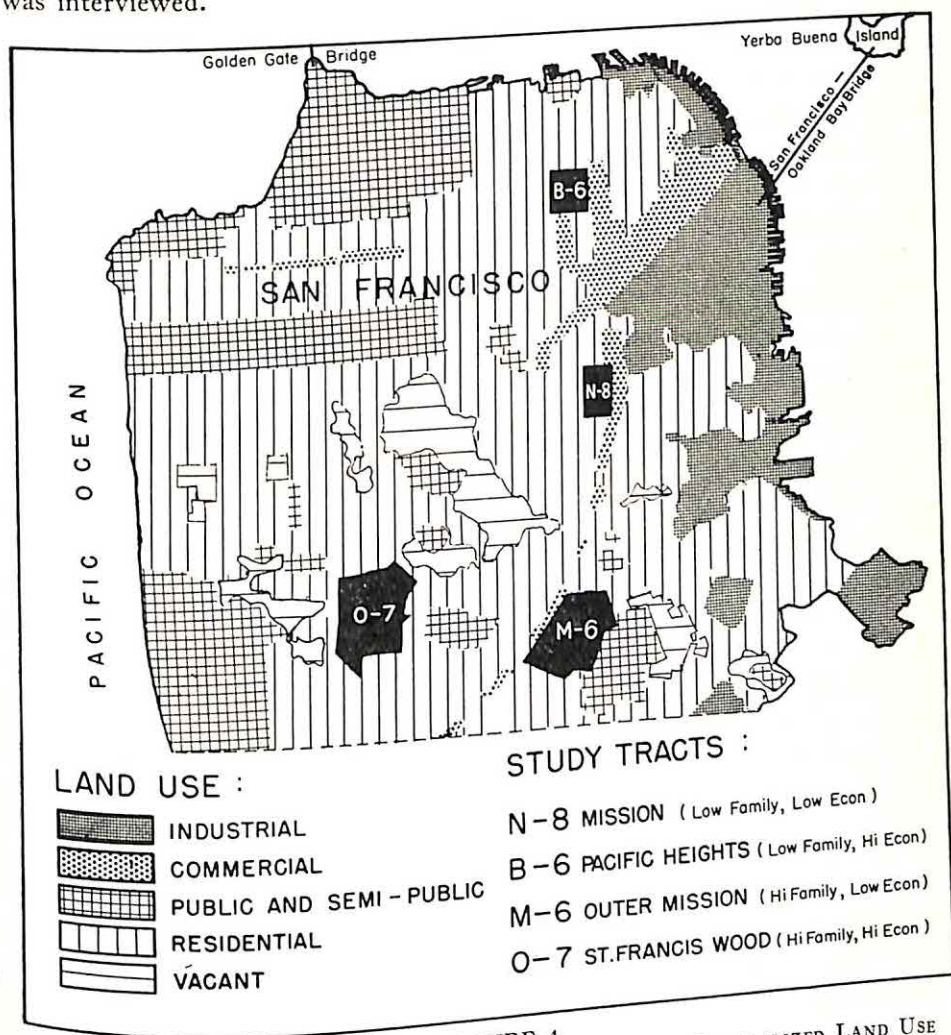


FIGURE 4
GEOGRAPHIC LOCATION OF THE FOUR STUDY TRACTS AND A GENERALIZED LAND USE MAP FOR SAN FRANCISCO AS OF 1950

Our chief concern here, however, is not with the details of the survey procedure, but rather with the use of the Shevky typology for the design and execution of urban sub-area field studies. What concerns us is the kind of analysis this study design allows.

The analysis of dependent variables by family status at two levels of economic status is permitted by this design—by comparing Outer Mission

with Mission and St. Francis Wood with Pacific Heights; also permitted is the analysis of dependent variables by economic status at two levels of family status by comparing Outer Mission with St. Francis Wood and Mission with Pacific Heights. Table 1 was constructed to serve as an example of this type of comparison. One element in the informal participation of adult males, informal participation with neighbors, in the four San Francisco neighborhoods is shown here.⁷

Referring to Table 1 it can first be noted that in spite of the widely different social characteristics of each of the study neighborhoods no less than 41.8 per cent of the men in each neighborhood report that they get together

TABLE 1
FREQUENCY OF INFORMAL PARTICIPATION WITH NEIGHBORS BY TYPE OF NEIGHBORHOOD*

Frequency of participation	Low family low econ (Mission)	Low family high econ (Pacific Hts.)	High family low econ (Outer Mission)	High family high econ (St. Francis Wood)
Isolated (About once a year or never)	58.2%	51.3%	41.2%	33.3%
Not isolated (A few times a year or more)	41.8%	48.7%	58.8%	66.7%
Total	100.0%	100.0%	100.0%	100.0%
Number of cases	(172)	(191)	(170)	(168)

*Of the men in each neighborhood, the per cent who get together informally with their neighbors a stated frequency.

informally with their neighbors a few times a year or more. The first conclusion then, would be that informal neighboring is by no means absent in these urban neighborhoods. This finding, of course, is consistent with the findings of other recent empirical studies which consider informal participation among neighbors in urban areas.⁸

Second, one might point out that there is a negative relationship between family status and men's social isolation from their neighbors. At each level of economic status it is the low family status neighborhood which contains more socially isolated men. Of the two economic status tracts Mission, the rooming house neighborhood, has 58.2 per cent of its men who report

⁷Following the excellent study of participation reported by Axelrod (3), informal participation was analyzed by four broad categories: neighbors, co-workers, relatives other than those living with the respondent, and friends other than friends who are neighbors, co-workers, or relatives.

⁸See Axelrod (3), Foley (7), and Greer (8).

that they are isolated from their neighbors, while Outer Mission, the small detached home neighborhood, has only 41.2 per cent of its men who so report ($p < .01$). At the high economic status level Pacific Heights, the expensive apartment house neighborhood, has 51.3 per cent of its men who report that they are isolated from their neighbors, while in St. Francis Wood, the large detached home neighborhood, only 33.3 per cent of the men so report ($p < .01$). Thus, although a considerable proportion of the men in each neighborhood report that they are not isolated from their neighbors, the men living in the neighborhoods characterized by low family status report more isolation than those living in high family status neighborhoods. Many features of those neighborhoods characterized by a good deal of family life apparently serve to bring the men of the neighborhood into informal contacts with other members of their neighborhoods. The interaction of children in the neighborhood play group undoubtedly serves to bring the parents in the neighborhood into closer contact; the fact that wives, sisters, and mothers are more likely to be in the home during the day establishing relations with one another probably contributes; also the stability of relationships characteristic of the more permanently occupied owner-occupied single family detached homes as over against the rented room or apartment in the rooming house or apartment neighborhoods may contribute to more social contacts among men in these neighborhoods.

Third, one might observe the negative relationship between economic status and social isolation from neighbors at each level of family status. Although not statistically significant, a comparison of low and high economic status neighborhoods, holding family status constant, reveals a greater proportion of men who are socially isolated from neighbors living in the low economic status neighborhoods. Mission contains a larger percentage of such isolated men than does Pacific Heights, and Outer Mission contains a larger percentage of such isolated men than does St. Francis Wood.⁹

Fourth, it can be noted that the differences in isolation from neighbors are more a function of differences in family status between neighborhoods than differences in economic status. Differences in this form of social isolation are larger when comparing Mission with Outer Mission (17.0 per cent) and Pacific Heights with St. Francis Wood (18.0 per cent) than they are when comparing Mission with Pacific Heights (6.9 per cent) and Outer Mission with St. Francis Wood (7.9 per cent).

⁹Differences in neighboring by economic status are discussed even though they are not statistically significant since these data are to be used for illustrative purposes later in the paper to show the utility of the typology for the simultaneous analysis of personal and unit data.

It might be added that the low family status, low economic status neighborhood, Mission, contains the largest percentage of men who report that they are isolated from their neighbors.

The Shevky framework also allows another type of analysis. This is the analysis of the combined effect of unit characteristics and personal characteristics on the social isolation of individuals. Space does not permit more than a brief presentation of one example.

Lazarsfeld and Barton (10) have discussed the difference between personal characteristics and unit characteristics, a distinction which depends on the *level of aggregation* of the object of a datum or an index.¹⁰

Personal data characterize individuals. . . . Unit data characterize some aggregation of people. . . . Of course, people can be aggregated in many different ways, some of which imply social interaction and others only categorization by the observer. A "unit" in our sense will be any aggregation—an Army company, a neighborhood, an occupational category, a political party.

In Table 2, isolation from neighbors is broken down by occupation typical of the neighborhood (*a unit datum*) and by individual occupation (*a personal datum*). As a unit datum, this type of characteristic is a primary characteristic of individuals since it essentially refers to characteristics of persons, but is an analytic characteristic of the neighborhood. Mission and Outer Mission are designated blue collar neighborhoods in that most of the men in these two neighborhoods are engaged in blue collar occupations. Likewise St. Francis Wood and Pacific Heights, containing mostly men who are engaged in white collar occupations, are designated white collar neighborhoods. Then, within each neighborhood the men are classified by their individual occupation. It can be seen from Table 2 that 73 of the men in the *blue collar neighborhoods* have *white collar occupations* themselves, and that 40 of the men in *white collar neighborhoods* have *blue collar occupations* themselves. By further classifying the men by their degree of social isolation from neighbors, additional statements can be made concerning the relationship between economic status and social isolation.

Note that a larger percentage of white collar persons than blue collar persons report that they are isolated from their neighbors in the blue collar neighborhoods. However, the reverse is the case in the white collar neighborhoods in which blue collar persons more often report that they are isolated than do white collar persons. Thus, when the individual's occupation is considered along with an aspect of the social character of the neighbor-

¹⁰Also see Kendall and Lazarsfeld (9).

hood, the occupation typical of the neighborhood, it is discovered that an individual is more likely to be isolated, whatever his individual occupation, if he has an occupation that is atypical of the neighborhood in which he lives. The persons with "deviant" occupations for their neighborhood are most likely to be isolated from their neighbors.¹¹

TABLE 2
ISOLATION FROM NEIGHBORS BY OCCUPATION TYPICAL OF NEIGHBORHOOD AND
INDIVIDUAL OCCUPATION

	Occupation typical of Blue collar* neighborhoods	Occupation typical of neighborhood White collar** neighborhoods
<i>White collar persons</i>		
Isolated	55%	42%
Not isolated	45	58
Total	100%	100%
Number of cases	(73)	(319)
<i>Blue collar persons</i>		
Isolated	48%	50%
Not isolated	52	50
Total	100%	100%
Number of cases	(269)	(40)

*Blue collar neighborhoods are Mission and Outer Mission, the two low economic status neighborhoods.

**White collar neighborhoods are St. Francis Wood and Pacific Heights, the two high economic status neighborhoods.

Other examples illustrating the same or different ways in which the distinction between personal and unit data can be used in the analysis of these data might have been selected. One might ask whether unit occupation or personal occupation is more important for differences in social isolation; whether having children oneself (*a personal datum*) or living in a neighborhood that contains many children (*a unit datum*) is more important in accounting for differences in social isolation. The point is, however, that the Shevky typology permits this type of analysis.

E. CONCLUSION

This paper has attempted to demonstrate and evaluate the utility of the Shevky urban typology for the design and analysis of urban sub-area field

¹¹Grouping the "deviant" persons together, without regard to whether they are white collar or blue collar, and comparing the proportion isolated with that proportion of the persons with "typical" occupations yields a difference at the .10 level.

studies. The Shevsky approach differs from the traditional ecological approach in that the former is an attempt to describe and analyze the *social* structure of the city, while the latter is focused on the *spatial* structure of the city. The geographic space frame was utilized, however, along with the Shevsky typological analysis to complete the description of the nature of the particular urban neighborhoods.

The examples presented in this paper illustrate that the Shevsky method of analysis of census tract data provides a frame within which detailed investigations of the social relations in sub-communities within that city can be designed and executed. The use of the Shevsky typology seems to serve at least three functions for such field studies.

(a). *The typology can be used as a device for the selection of neighborhoods for intensive study.* In the example given four census tracts were selected having particular social characteristics with respect to family status, economic status, and ethnic status. As a sampling technique, the typology allows the research worker to select urban sub-areas for intensive study on the basis of informed judgment concerning the social positions of the sub-areas in relation to the broad outlines of the social structure of the larger urban area as a whole.

(b). *The typology provides an integrative frame for urban sub-area field studies through conceptual articulation and integration with a large mass of ordered data.* The Shevsky typological analysis of the census tract data for the entire Bay Region is related to these sub-area field studies in that the principal elements of the Shevsky typology correspond to the basic concepts utilized as independent variables in the field studies. Economic status and family status are important concepts in sociological theory as well as two of the principal components of the typology. On the one hand the sub-areas can be seen in their relation to all other sub-areas of the city with respect to economic, family, and ethnic status. On the other hand, the analysis of social participation and isolation between neighborhoods was executed in terms of economic status and family status with ethnic status held constant.

(c). *Finally, the typology is adapted to the analysis of the combined or independent effect of personal and unit characteristics on dependent variables.* The joint use of personal and unit characteristics was demonstrated by analyzing social isolation by individual occupation as well as by occupational type most representative of the neighborhood as a unit. As a result, it was possible to see that members of occupational groups atypical of the neighborhood were more isolated from their neighbors, regardless of their indi-

vidual occupations, than were members of occupational groups typical of the neighborhood. As Lazarsfeld and Barton (10) point out, this type of analysis may be of great promise for social research.

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EXPERIMENTAL RESULTS IN RELATION TO A MATHEMATICAL THEORY OF BEHAVIORAL DIFFUSION*

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This paper represents an attempt to describe a theory of behavioral diffusion, on which was based a series of lectures given by the present writer at the University of Washington in the Summer of 1952, and to present two brief experiments which were undertaken as a check upon certain portions of that theory.

Diffusion theory deals mathematically with one of the basic problems of social psychology, namely, how does new behavior, once it has arisen, spread through a given population, particularly when its chief means of propagation is on a person to person basis. By new behavior we mean a response or an activity which has never appeared before and which may be expressed in any sensory modality, and which may be elicited by any type of stimulus. Such behavior may originate in one individual or, simultaneously in a group of individuals, although new behavior is *generally* assumed to arise uniquely in one individual. Such behavior spreads under various types of social constraint, such as, for example, social selectivity in acquaintanceship, and *periodic cycles of sociality* which describe the variation in any single individual's day-to-day contacts with friends, as well as dozens of similar considerations. Every psychological or sociological factor which could facilitate or impede the spread of new social behavior is quite translatable into quantitative terms, within the framework of the theory to be described. Any realistic theory of this kind, if it is to be of any genuine value, must succeed in accomplishing two basic objectives. (a) It must develop theoretical models which weave any number of the many types of parametric constraint which govern diffusion, into a homogeneous mathematical warp and woof, if such a theory of behavioral diffusion is to approximate the results of socio-psychological realities. (b) It must build models whose concepts can be operationally defined and whose parameters can be determined by ordinary statistical procedures.

The theory which we are about to present is a clock-time theory of diffusion, that is to say, a theory concerned with formulating models which will enable us to predict the growth in the spread of any kind of socio-psy-

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chological behavior. Its primary objective is to place the social psychology of imitation on a quantitative basis. Depending upon what type of behavior is being studied, the models of such a theory will incorporate psychological parameters or sociological parameters, and generally a mixture of both. Since problems of communication and the spread of information are also directly attackable by our theory, the focus of interest is not *exclusively* the social psychology of imitation. Examples of the type of behavior whose spread we would wish to study would be the passage of a new slang term through the general population, the dissemination of a rumor or of slander in a political whispering campaign, the increase in the number of people playing Canasta, the adoption of a new style of clothing, the spread of fads and hobbies, the adoption of a new feminine hair-do, and literally hundreds of other items whose enumeration need not detain us. Although we are greatly interested in the psychological factors which prompt individuals to adopt new behavior, and although we must frequently incorporate and express such factors as a parameter of some mathematical model, the main consideration will always be *the numerical growth in time of the number of individuals who exhibit the behavior we are studying*. The models of our theory are built up from certain *basic parameters*, and these will be described at this point.

The process of diffusion can be classified in three ways. These are: (a) atomistic diffusion, (b) gross diffusion, and (c) mixed diffusion. *Atomistic diffusion* occurs when behavior spreads strictly on a person-to-person contact basis. *Gross diffusion* is a one-way spread and occurs when behavior (or information) is spread only from a *central or gross source*, such as radio, press, pulpit, cinema, television, and other mass media of communication. *Mixed diffusion* occurs when behavior is spread in both these ways. The diffusion theory I wish to present in this paper, has models for each of these three types of *transmission process*, but the material I propose to discuss here will be limited to models of atomistic diffusion only.

As we have already remarked, any realistic theory of diffusion has to reflect many types of psychological and sociological factors, in order to do justice to the rich corpus of possibilities which can determine the spread of new behavior. However, basic to all models are four essential, statistical parameters. These are (a) the nature of the mode of social contact, (b) the nature of the repetitious contacts we make with our acquaintances, (c) the nature of the *acquaintance structure* which characterizes a given population, and (d) the *periodicity* of our social contacts. Each of these will be briefly described here.

1. Every individual will show a variation in the number of friends, acquaintances, or associates he contacts, as time passes. By the mode of social contact we refer to any mathematical function which will express this variation, whether it be hourly during the day, or diurnally over a week. If the nature of a social group, a social situation, or a social artifact has produced some regularity in this variation and, *if in a statistical sense*, this regularity is describable mathematically, then the function which does this is said to describe the mode of social contact. Frequently social artifacts exist which make the mode of social contact rythmical with time, that is to say, it represents a repetitive pattern, and is therefore periodic. Thus for many individuals in the United States, who are churchgoers, the calendar week would be such an artifact. Sunday at church would be the week's high point of social contact, with variations to be determined from Monday through Friday, and with Saturday representing a secondary high point of social contact due to the fact that Saturday is so frequently the day for intimate social get-togethers. The reader can probably supply many other examples of *periodicity in social contact*, for himself. For our purposes, however, such periodicity may be any one of three possible types, and we therefore classify them at this point.

(a) *Functions with concurrent periodicity.* In these the mode of social contact is subject to some artifactual rhythm like the calendar week, and is therefore said to possess a *period*, k . During this period each individual of the population makes a variable number of social contacts in each unit of time involved. This last is, of course, meant *in a statistical sense*. In this kind of periodicity any individual's mode of social contact may be said to be at *some contact phase* of this social periodicity, for each unit of time of the period in question. When any population possesses individuals all of whom have the *identical contact phase* for every unit of time over the period, then the periodicity involved is said to be *concurrent*. To say that n individuals are at the same contact phase at $t = t'$, is to say that each of them meets the same number of individuals at $t = t'$.

(b) *Functions with serial periodicity.* The preceding type of periodicity is a function of calendar time and is independent of the nature of the behavior which is being spread. When, however, the *contact phase* for any given individual is a function of the *psychological intensity* with which he transmits new behavior, we have a totally different situation. In these cases we are generally dealing with behavior which is of such intense interest to the diffuser that he tends to make large numbers of contacts at first with associates, in an effort to share that behavior. As interest flags, the num-

ber of contacts declines, and eventually peters out to zero. These then are waxing and waning *intensity functions*, peculiar to each transmitter of new behavior. They are, of course, mathematically describable. As a result every convert to new behavior begins to transmit it at *Phase 1* and ends his transmission of it at *Phase k*, where *k* is the period of the mode of social contact. The period here is naturally the *mean length of time* which individuals in the population spend in transmitting the new behavior, and this *mean length of time* is clearly the *period of the psychological intensity function involved*. But we must clearly note here that, if *A* and *B* are two random individuals, and if *A* is a converter while *B* is not, then if *A* meets *B* at $t = t'$, *A* will be at *some one of his social contact phases*. In short, the number of social contacts *A* will make at $t = t'$ will be proportional to the value of t' , and the number of contacts *A* makes over the period, *k*, will decline with the passage of time, since the mode of social contact is a function of the waning interest in spreading the new behavior. But what about *B*? If *B* is converted at $t = t'$, then *B* will start converting at $t = t' + 1$, but at $t = t' + 1$, *B* will be at *Phase 1* of his social contacts, that is, at the apogee of his interest. Thus in what we have called *serial periodicity*, every converter has both a public and a private time. His public time is given by the value of *t*, his private time by the particular *contact phase* he happens to be at for each value of *t*. To put it another way, private time is psychological, being a function of the intensity of interest one has in the new behavior, and is measured by the number of contacts with our associates we are willing to make in order to share that behavior. As a result *serial periodicity* is defined as *that mode of social contact such that for any given value of public time, individual converters will show a variation in their private times*.

(c) *Functions with rectangular periodicity*. In these functions, from a statistical standpoint, every person in the population is regarded as having a mode of social contact that is *constant over time*. In short these are straight-line mathematical functions parallel to the time-axis. They are really without any periodicity, but for the sake of terminological consistency we have spoken of this mode of social contact as possessing *rectangular periodicity*.

2. The *repetitions* a transmitter makes among the acquaintances he contacts are classified as follows.

(a) Repetitious contact with an acquaintance that one has converted in a previous unit of time.

(b) Repetitious contacts with acquaintances converted by others in a previous unit of time.

(c) Repetitious contacts with acquaintances that one has already converted in the same time unit.

(d) Repetitious contacts with acquaintances that others have already converted in the same time unit.

3. The *acquaintance structure* of a population refers to the *degree of interrelatedness of its members*. It represents the measure of cohesiveness which exists among a group composed of any random individual and his acquaintances. The degree of this cohesiveness is qualitatively described as follows.

(a) If i persons are represented by a plane polygon of i vertices (*an iad*), and if each of these i persons knows all the remaining $i-1$ persons, then this can be shown by connecting every vertex to all the other vertices. This property of *mutual all-around acquaintanceship* is derivatively called *iadicity* and such a group is said to be completely *iadic*.

(b) If every individual possesses D acquaintances, and if no two of these D acquaintances know each other, such an *acquaintance configuration* is said to be *ramified* from the fact that if a whole population possesses this property, a diagram of the acquaintance structure will have a *branching* or *ramified appearance*.

(c) If some of a random individual's D acquaintances know each other and some do not, then the population is said to be *mixed*, that is, *partially iadic* and *partially ramified*. The degree of *internal amicability* or *iadicity*, I , can be measured for such a population by means of the formula,

$$I = \frac{D + r}{(D + 1)C_2}$$

where r represents all the *pairs* of one's D acquaintances, who know one another.

4. We have discussed 4, in effect, under 1.

By combining the three types of the social mode of contact with the three types of acquaintance structure, and these in turn with the presence or absence of repetition in the contacts one makes with one's acquaintances, we can develop a basic taxonomy for model building in diffusion theory. Such a taxonomy yields 18 basic structures of diffusion, each of which is modifiable for almost any psychological or sociological condition one can mention, so that any actual or assumed set of socio-psychological constraints governing the spread of some given type of behavior, can be reflected by means of some mathematical model. These 18 basic models are shown in Table 1.

In Table 1 the starred cases (10 to 18) represent our cases involving

repetition, that is, cases in which contacts with individuals already exhibiting the spreading behavior are assumed capable of taking place. In Cases 1 to 9, it is assumed that for given, short periods of time, *for all practical purposes*, any converter who meets an acquaintance will find not only that he is not yet converted, but will also discover that he will not meet him again until after he has met all his other acquaintances *at least once*.

TABLE 1
CASES OF DIFFUSION CLASSIFIED BY PERIODICITY, GROUP STRUCTURE, AND REPETITION

Structure	Periodicity (No repetitions)		Concurrent
	Rectangular	Serial	
Ramified	Case 1, 10*	Case 4, 13*	Case 7, 16*
Iadic	Case 2, 11*	Case 5, 14*	Case 8, 17*
Mixed	Case 3, 12*	Case 6, 15*	Case 9, 18*

These models are the *nuclear* models of diffusion theory. By revamping them so as to allow for various types of psychological and sociological factors and constraints, we can approximate socio-psychological realities of various degrees of complexity, and we have shown elsewhere (7) how some of the factors other than periodicity, acquaintance structure, and repetitions, must be introduced into these basic models in order to revamp them so as to approximate psychological and situational realities more closely. We will give one such example which was employed experimentally in a subsequent section of this paper. In a volume not yet published (8) all aspects of diffusion theory have been systematically explored by the present writer, far beyond the elementary exposition given in this paper,¹ with additional work along theoretical lines still in progress. The theoretical utility of both the basic models and the hundreds of revamped models is that the parameters which they require are strictly empirical, being sometimes *directly observable* and at other times calculable by statistical methods from protocol data, themselves. As hypotheses formulated to account for the spread of social behavior, diffusion models lend themselves readily to empirical verification because of the fact that we can set up the experimental conditions, ourselves, and introduce any type of constraint we wish, as has in fact been done elsewhere in the U.S.² Among *some of the other practical uses*

¹The reader who is interested in the mathematical analysis of these 18 cases or in the mathematical analysis of various socio-psychological aspects of diffusion not dealt with in these 18 cases, may obtain copies of these by writing to the Washington Public Opinion Laboratory.

²Consult the Washington Public Opinion Laboratory under the auspices of Stuart C. Dodd, concerning the vast experimental program which has been conducted in connection with diffusion theory, under what has come to be known as "Project Revere."

to which the models in diffusion theory can be or have been put, are the following: (a) application to the problem of assessing how far and how rapidly propaganda may be disseminated among populations of a particular description, a matter which has been of interest to certain government agencies; (b) an organization and classification of the factors underlying communication, rumor, and the spread of information; (c) applications in the study of the genesis and growth of consumer preferences in relation to market research techniques, and (d) the development of a mathematical social psychology of acculturation. There are additional practical and theoretical uses for diffusion theory, but these cannot be entered into in this paper. At this point, however, I should like to turn to a discussion of model construction and experimental techniques for their verification. I shall introduce three models, Cases 10 and 11 of Table 1, together with a revamping of Model 11. Model 10 will be presented for expository purposes only, without any consideration of experimental work. Model 11 as well as its modification, will both be presented as hypotheses to account for the spread of new social behavior *in two different experimental situations*. The observational data from these experiments will be furnished together with the data calculated theoretically from the models, and a brief statistical analysis will be furnished of the goodness of fit of the predicted to the observed data.

We shall first present Case 10 without comment. The model for Case 10 represents a hypothetical situation in which a population's acquaintance structure is *completely ramified*, in which the periodicity of the mode of social contact is *rectangular*, and in which any converter is assumed capable of meeting his acquaintances more than once.³ Let the mode of social contact be represented by the function, $\phi(t) = m$, that is, every person contacts *m different persons* per unit time, and let *D* equal the size of any person's circle of acquaintances. When any recent convert starts his own conversion cycle, he has a certain probability of meeting his own converter. This is given by $1/D$. Now let the symbol Δ_v represent the *increment of converts* made by any transmitter, at *t*. Then

³Underground political or revolutionary movements which form cells with cell leaders and cell rank and file, in which no two of the cell rank and file know each other, altho each rank and file member is a leader in another cell, satisfy the conditions of Model 10. This is particularly true when each cell leader meets his followers at stated periods, and every follower meets his own cell rank and file at subsequent periods; and every cell leader requires several meetings in order to pass on information which is to be spread, because not all his followers show up at any one meeting and several show up at more than one meeting. This type of political structure is aimed at minimizing the number of people who can be rounded up when one or more members of this party population is apprehended by the authorities.

$$\Delta_1 = m - m/D = m(D - 1)/D = mC \quad (1)$$

We also have that

$$\begin{aligned} \Delta_2 &= m - m(\Delta_1 + 1)/D \\ &= m - m[m(D - 1)/D + 1]/D \\ &= m[(D - 1)/D] [(D - m)/D] \\ &= mCK^{2-1} \end{aligned} \quad (2)$$

where $K = (D - m)/D$ in equations (2), and in general we shall find that for any transmitter who is passing on the new behavior *at the t-th unit of his own conversion cycle*, we have that

$$\Delta_t = mCK^{t-1} \quad (3)$$

where $K = (D - m)/D$.

The preceding equations merely show us what happens during any random transmitter's own conversion cycle. It represents the increments in the converts to the new behavior, which are produced at each different time unit of that conversion cycle. However, all converts are adding increments in each unit of time and, in general, at any one value of t different converts are transmitting the new behavior at *different phases* of their respective conversion cycles. In other words, even though Case 10 involves *rectangular periodicity*, since the mode of social contact is both constant for each person and the same for all persons, nevertheless it represents a case of *cryptic serial periodicity*. This is so for two reasons. First, each transmitter, under the conditions of Case 10, *meets a variable number of different, new, non-converts among his acquaintances, from day to day, so that his effective periodicity is serial*. Second, during the conversion process, *every converter has his own private time which cuts across the public time*. We therefore have to turn to the task of obtaining the *total increment of new converts* to the spreading behavior, *which is produced by all the converters acting at any given time*, not merely any single converter. In order to do this, we have to introduce the notion of a *P-schema* or *increment schema*. An increment schema will be a notational device or tableau for showing what the *total increments* will be for each value of t . In order to simplify our explanation of what we mean by a *P-schema*, we shall let Δ'_t represent the *total increment* at time, t , and we shall make the following substitution,

$$\Delta_t \equiv P_t \quad (4)$$

Then in a population possessing *ramified* structure, and subject to the conditions of Case 10, every individual transmitter will generate the parti-

cle, P_i , at $t = i$, in his own private time. All members of every newly generated particle, such as P_i , will, in turn, generate a series of particles, *starting in public time*, the first of which will be P_1 , the second, P_2 , etc. In order, however, to see the relation between the increments in private time produced by any single transmitter and the total increments which occur in public time, we must set forth below the *tableau* to which we have already made reference. If we let $P_0 = 1$ represent the starter or the primary distributor of the new behavior, and Δ'_t the total increment at public time, t , we will obtain the following schema:

$$\begin{aligned}
 \Delta'_0 &= P_0 \\
 \Delta'_1 &= P_1 \\
 \Delta'_2 &= P_2 + P_1^2 \\
 \Delta'_3 &= P_3 + 2 P_1 P_2 + P_1^3 \\
 \Delta'_4 &= P_4 + 2 P_1 P_3 + P_2^2 + 3 P_1^2 P_2 + P_1^4 \\
 &\vdots \\
 &\vdots \\
 \Delta'_t &= F(h_t, P)
 \end{aligned} \tag{5}$$

The notation, $F(h_t, P)$ is to be read as "the function in P the aggregated subscripts of whose terms represent each of the *partitions* of the integer, t , and the coefficients of whose terms are the permutations of each such partition."

Now in order to obtain the *total increments* for Case 10 we have to make the appropriate substitution of P_i in the increment schema, represented by equations (5).

Since we now have that

$$\Delta_i \equiv P_i = mCK^{i-1}, \tag{6}$$

if we make the substitutions mentioned above, we obtain

$$\begin{aligned}
 \Delta'_0 &= 1 \\
 \Delta'_1 &= mC(K + mC)^0 \\
 \Delta'_2 &= mC(K + mC)^1 \\
 \Delta'_3 &= mC(K + mC)^2 \\
 &\vdots \\
 &\vdots \\
 \Delta'_t &= mC(K + mC)^{t-1}
 \end{aligned} \tag{7}$$

Since it can be shown by a proof we shall not furnish here, that the dropping of C within any of the expressions of equations (7), is absolutely negligible, we will then have that

$$\Delta'_t = m(K + m)^{t-1} \quad (8)$$

and since $K = (D-m)/D$, substituting in equation (8) we obtain

$$\Delta'_t = m \{ [D(m+1)-m]/D \}^{t-1} = mR^{t-1} \quad (9)$$

We now have the problem of determining the *accumulated total increments* over the total interval of time during which conversion has been taking place throughout the population. This is an interval consisting of t units of time. If we let $N(t)$ represent the *sum* of all the separate total increments over this period, we have that

$$N(t) = m + mR + mR^2 + \dots + mR^{t-1} + 1 \quad (10)$$

and since equation (10) represents an ordinary power series we get

$$N(t) = m \left(\frac{R^t - 1}{R - 1} \right) + 1 \quad (11)$$

Expressing equation (11) in terms of m and D only, by substituting $R = [D(m+1) - m]/D$ into equation (11), yields

$$N(t) = \frac{[D(m+1) - m]^t - D^t}{D^{t-1}(D - 1)} + 1 \quad (12)$$

Here $N(t)$ of equation (12) gives us the *total number of individuals* who will exhibit the spreading new behavior, after a lapse of t units of time.

In Case 11 to which we will now address ourselves, we have the following conditions. We have a population whose acquaintance structure is completely iadic, that is, *everyone has the possibility of contacting and converting anyone else*. Thus this population is completely iadic *with respect to the behavior in question*. This does not necessarily mean that everyone knows everyone else, though it *may* mean that for some populations. The mode of social contact is assumed constant for all, that is, everyone meets the same number of persons per unit time, or, in short, we have rectangular periodicity. Finally every converter may make repetitious contacts with individuals who are already converted.

In Case 11, if the total population is M , and if the number of *infected or converted* individuals at the start of any given time, t , is $N(t-1)$, then the probability that any random converter will not have a repetitious contact is $[M - N(t)]/M$. If we let $K = m/M$, then the following recursion equation will give us $N(t)$.

$$N(t) = N(1) [N(t-1)] - K [N(t-1)]^2 \quad (13)$$

Methods have been devised for expanding equation (13) and evaluating each term of the expansion, since every term of the expansion is of the form

$$nK^r(1-K)^{r-1} N(1)^x$$

and the total value of the expansion for any value of t can be determined by rather simple, algebraic methods. This being so we should like to describe below a simple experiment which was conducted under the auspices of the University of Washington in order to check the power of Model 11.

The following diffusion experiment was conducted at a Y.M.C.A. summer camp in July, 1952. During a two-hour rest period a population of 37 out of 42 boys were involved in the acquisition of new behavior which consisted of acquiring and wearing a certain type of pin. The group was small, all knew each other, and therefore the population in question was completely iadic. The distance factor between interactors was negligible and other conditions were kept fairly constant. The experimental time interval involved was a two-hour period. The observations required were made in 15-minute intervals of this two-hour period. There were no other competing activities during the experimental interval and the act of acquiring the pin was unrepeatable. The number of starters or primary distributors here consisted of three boys, one a leader, one an isolate, and one a "midler," as determined from a previously administered sociometric test. The growth in the number of boys who acquired the pin was recorded, as already remarked, in 15-minute intervals. The experiment was conducted as follows.

The three "starters" were given a large yellow pin with the name of the camp and a question mark in black on it. Each was told:

Here is a special pin. It is important that you wear it today. We have a few more of them, but not enough for all the campers. Those campers who find out about this and come to the "Old Lodge" will also get a pin, as long as our supply lasts. Remember, it is important that you wear it today, and remember that we don't have very many pins.

As each of the starters went back into the camp, others saw the pin, asked about it and came to get one like it, and presumably non-converts who were seen by new converts were affected by these latter in the same way that non-converts would be affected by the starters. Here $M = 42$ and, although m was not directly observed at the time of the experiment, since Model 11 had not yet been developed, a guessed estimate of m was made. We must

remind the reader here that m is the mode of social contact, that is, the average number of persons each of the boys contacted per unit time of 15 minutes. The value guessed for m at the time was 1.0, later actually found to be very close to the true value of .92. In Table 2 the observed number of converts during the experimental 15-minute intervals and the predicted number of converts, based upon the recursion relationship of equation (13), have been set forth.⁴

TABLE 2
GROWTH OF THE PIN-REQUESTING BEHAVIOR AT A CAMP (A TEST OF A DIFFUSION MODEL)

Clock time interval t	Expected converts e	Observed converts o
12:45	3.00	3
12:46 to 1:00	2.76	0
1:01 to 1:15	4.84	6
1:16 to 1:30	7.74	9
1:31 to 1:45	9.17	8
1:46 to 2:00	7.15	5
2:01 to 2:15	2.08	3
2:16 to 2:30	0.37	2
2:31 to 2:45	—	1
Total	37.11	37

As the reader can see, the expected and observed number of converts in each 15-minute interval, agree fairly well. The Washington Public Opinion Laboratory worked out a closeness of fit correlation coefficient and obtained $r_{eo} = .85$. This was acceptable at the 5 per cent confidence level, although it was not up to the standard generally sought by the *WPOL*, namely, a value such that $r_{eo} > .9$. However, the *WPOL* concluded that an r_{eo} of .85 on uncumulated data was a sufficiently fair fit of the expected values of Model 11 to the observed data, to warrant further experimentation which was subsequently undertaken.

I now wish to describe a second experiment which was undertaken by the *WPOL*. This experiment is known as the Chain Tags experiment, and was repeated in each of four matched villages of about a thousand population each. In order to induce individuals to pass on a printed message from person to person (atomistic diffusion), a modification of the chain

⁴I am indebted to Professor Stuart Carter Dodd and his associates for the details of the experiment described above, for the computation of the theoretical frequencies, the construction of the table, and for the statistical analysis, findings, and interpretations. I am also indebted to the same source for the analogous considerations applying to the second experiment to check a theoretical model, an account of which is also given in this paper.

letter idea was employed. Ten representative starters were chosen for each of these four communities. Each of these 10 starters was given a cellophane wrapped packet containing an identical batch of postcards with a return address. Each packet could be broken up by every recipient of it, into a "tracer" postcard to be filled out and mailed in and a subpacket which was to be given to someone else. Each primary packet containing a series of 10 subpackets, allowing it to pass through a chain of 10 persons through not more than 10 removes. Each card provided for the name and address of the receiver and provided space for him to supply the name of the person who gave him the packet, the name of the person to whom he gave the packet, and the time and place at which both these transactions took place. A different type of motivation was employed in the conduct of this experiment, in each of the four towns. In Town 1 it was "to help science," in Town 2 "to help Civil Defense," in Town 3 "to help a modern Paul Revere in an emergency" (that is, to test whether a vital message could be spread in this person-to-person fashion), and in Town 4 the motivation was "to earn a dollar" (a payment for responding). Three weeks were allowed for the process of diffusion to run its course, this being the deadline date printed on the cards. Measures were taken to eliminate the effects of daily and other cyclic activities. Distance may have had some effect, though that effect was believed to be minimal, and insufficient data were present to determine the effect of distance. The stimulus, motivation, and other conditions appeared to be fairly constant within each town. Here the number of *primary distributors* (starters), the mode of social contact (number of persons contacted by a packet-mailer per unit time), the total population (M), and the total period or interval of diffusion (t) were all experimentally controlled in this Chain Tags experiment.

By virtue of the conditions described above, the appropriate theoretical model required, was a variant of Model 11. In this experiment, *only what we have previously called Δ'_t , namely, the total increment or growth of converts at time t , can continue the conversion process*. All converts from $t = 1$ to $t - 1$, *drop out of the conversion process*, since, so to speak, they have "but one packet to give for their country." The only effective transmitters are the *current holders of a subpacket*. As a consequence a modification of Model 11 was developed, with whose formulation we will not burden the reader here, in order to take care of the necessary relevant conditions described in the foregoing. The *modified model* was then applied to the data from the four towns combined. The number of receivers predicted from the modified model and the number of receivers actually observed

were then compared, in terms, however, of the removes or the number of persons receiving packets per each ordinal link of the transmission process, itself. This method of recording dispenses with the use of chronological units. As we have already remarked, there can be, at most, 10 such removes. The expected and observed frequencies are set forth in Table 3.

TABLE 3
GROWTH OF THE MESSAGE-RECEIVING BEHAVIOR IN FOUR TOWNS

Order of the remove	Expected receivers	Observed receivers
zero-th	40.00	40
1st	28.00	28
2nd	23.00	23
3rd	21.19	23
4th	24.97	20
5th	18.88	19
6th	19.38	16
7th	14.56	10
8th	7.12	7
9th	5.36	7
10th	6.97	8
Total	209.	201

The closeness of fit correlation for the uncumulated data, worked out by the *WPOL*, was .93, with a goodness of fit from sampling acceptable at the 1 per cent confidence level. The *WPOL* noted that this r_{co} of .93 exceeded its standard of .9 and the 5 per cent confidence level, and concluded that the variant of Model 11, adopted for this experiment, fitted the data well and that, under like conditions of random and steady state diffusing, it may be expected to predict well in new diffusion situations.

Diffusion theory is still in its infancy. The examples I have given here of my own theoretical approach, is but an extremely small sample of the theoretical area covered, and my own approach is but one of many which are being tried throughout the country. This paper is written to kindle an interest in this little known sector of psychology, while at the same time reemphasizing the importance and the use of mathematical methods in the behavioral sciences, a matter to which others have recently called attention (3, 5, 6). The area of the social flow of behavior is vast enough to be studied by many approaches, and behavioral diffusion is but one type of flow system. Analysis of other types of social flow systems has begun in other quarters (1, 4). The quantitative rationales in psychology and the behavioral sciences should be accepted in the spirit in which Hull (2) spoke of these in the epilogue to his *Principles of Behavior*. Perhaps progress in

psychology may be accelerated somewhat, if the empirical aspects of the nomothetic approach are aided and abetted by an increasing use of mathematical techniques.

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INDIVIDUAL DIFFERENCES IN EVALUATIONS OF GROUP DISCUSSIONS AS A PROJECTIVE MEASURE OF ATTITUDES TOWARD LEADERSHIP*¹

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A. PROBLEM

In using the term *attitude*, one implies that a person brings with him to a new situation some residues of past experience which will affect his orientation, and hence his behavior. These residues may be characterized as systematic biases in the direction of certain kinds of evaluations, or as expectancies, or as predispositions toward certain kinds of responses, or as selective sensitivities and alertnesses to certain aspects of the situation. Whichever of these different or equivalent ways one chooses to characterize attitudes, they all lead to the expectation that if we had persons observe samples of social interaction, their individual differences in evaluations of these interactions would be symptomatic of differences in attitudes.

This is a report on an effort to employ this common sense notion to the diagnosis of attitudes toward leadership, and in particular, attitudes toward the amount of directiveness or dominance a leader should exhibit and the amount of initiative which it is appropriate for other group members to manifest. The general format is to present recorded samples of group interaction and then ask for evaluations of the behavior of the leader and other members of the group. If, indeed, there exist in individuals consistent attitudes organized around this dimension of leadership behavior it was anticipated that there would be some correlation among the kinds of evaluations made of different samples of group interaction. It was anticipated, for example, that the "superior oriented" person would tend to see the leader as inadequate if he was not high on initiative, expressing ideas, organizing, being strict, controlling, keeping the group moving, etc. At the same time, the superior oriented person would see the other group members as speaking up too much, not depending upon the leader enough, not accepting leadership, and the like.

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B. METHOD

In constructing the test, transcripts of actual group interaction were desired, both for purposes of verisimilitude and to reenforce the focus of an objective test situation in which the test-taker seeks after correct answers, and evaluates the external world rather than selfconsciously reporting on himself (2). It was believed that in most cases such discussion samples would be ambiguous enough to provide the necessary opportunity for the manifestation of those hypothesized *a priori* tendencies or attitudes.

Three stimulus materials were selected. The first was a 10-minute selection from a sound motion picture prepared by Dr. Herbert Thelan of the Human Dynamics Laboratory at the University of Chicago, in conjunction with the National Training Laboratory in Group Development. This selection shows a rôle-playing situation in which a group of community leaders are gathered to discuss joint action on the problem of juvenile delinquency. The other two samples were presented in the form of transcripts of recorded group discussions among Air Force officers in an experimental training program at the Air University. (These, too, were provided by the Human Dynamics Laboratory through Dr. Thelan and Dr. Betty Belk Sarchet.) In both transcripts, the problem before the group was that of drawing up a refresher curriculum for recalled reserve officers. One of the discussants was designated as discussion leader. The two transcripts were selected to show some contrast. In terms of the research in which they were collected, one of the groups was rated as having a permissive atmosphere in which the group was satisfied with the leader and productive in its efforts. The other group did not arrive at a suitable decision nor were the members satisfied with the leader. About four pages of transcript from each of these discussions was presented.

After listening to, or reading one of the group discussion samples, the respondent was asked free response questions and then 13 questions of a checklist type evaluating the leader and eight questions evaluating the group. The analysis presented here is based upon the checklist questions, which are shown here with scoring weights indicated.

Leader Behavior Items

1. Did the leader encourage members to contribute ideas?
too much + about right 0 not enough —
2. Did the leader give his own ideas?
too much — about right 0 not enough +
3. Did the leader organize the ideas of the group?
too much — about right 0 not enough +

4. Was the leader:
too strict — about right 0 too lenient +
5. Did the leader:
lose control + control about right 0 hold too much control —
6. Did the leader pay attention to the ideas of the members?
too much + about right 0 not enough —
7. Did the leader keep the group moving?
too fast — about right 0 not fast enough +
8. Did the leader show favoritism? yes — no +
9. Did the leader feel comfortable in the role of leader?
yes + no —
10. Did the leader hold himself apart from the group?
too much — about right 0 not enough +
11. Was the leader prepared?
very well + average 0 not well enough —
12. Was the leader: too self-confident — confident to about the right
degree 0 afraid of the group +
13. Do you think the leader was liked by members of the group?
yes + no —

Group Behavior Items

1. Did the group accept leadership?
too much — about right 0 not enough +
2. Did the followers depend upon the leader?
too much — about right 0 not enough +
3. Did the members speak up?
too much + about right 0 not enough —
4. Did members seek the leader's approval?
too much — about right 0 not enough +
5. How many of the group members were uncomfortable with this
type of leader? (few +) (many —)
6. How many of the group took the problem seriously?
(few +) (many —)
7. How many of the group members would have been uncomfortable
as a group leader? (few —) (many +)
8. How many of the group members would have done better as leader
than did the actual leader? (few +) (many —)

The plus represents the "superior oriented" end of the scale while the minus represents the "subordinate oriented" end of the scale in terms of *a priori* scoring keys. The test was administered to 253 pre-flight cadets just beginning training at Lackland Air Force Base in January of 1953.

C. RESULTS

The first step in evaluating the existence of an attitude is to find out whether or not there is consistency among responses to the items in terms

of the classification of responses posited in the scoring key. These data are presented in Table 1, using Kuder-Richardson type reliability coefficient

TABLE 1
RELIABILITY OF TEST PARTS AND WHOLE

	Movie	Transcript A	Transcript B	Total
Leader Behavior Items	-.07	.39	.62	
Group Behavior Items	.40	.41	.56	
Total	.26	.56	.43	.45

(6, p. 223, formula 10). Reliability coefficients are presented for the six sub parts of the test, i.e., leader and group items separately for each of the three transcripts. Reliabilities are also presented for each of the three transcripts, and for all parts combined. It is worth noting that the over-all reliability of the total test in spite of its large number of items, is less than the reliability of several of the parts. It is clear from these data that the scores from the various parts are not acting in unison. To check on this in more detail, the intercorrelations among the six scores are reported in Table 2. These data provide a surprising picture of low correlation. There

TABLE 2
CORRELATIONS AMONG TEST PARTS AND WITH F-SCALE

Movie, Leader Items	Movie, Group Items	Transcript A, Leader Items	Transcript A, Group Items	Transcript B, Leader Items	Transcript B, Group Items	F-scale
-.02	.01	.30	.07	.03		
.08	.23	.31	.32	.03		
-.03	.03	.07	.03			
.07	.07	.07				
-.01	.07	.04	.03	-.14	-.18	
.00	-.10					

is, first of all, further clear-cut evidence of the absence of any reliable variance in the ratings of leadership from the first discussion sample, the movie. Secondly, it appears quite clear that there is little in common between the evaluations of the leader and the evaluations of the group in our scoring system. While there are four highly significant correlation coefficients (all values above .17 are significant at the .01 level), only one of these occurs between an evaluation of group and evaluation of leader, and this one occurs for the same group discussion. On the other hand, there are significant correlations between discussion samples from group measure to group measure, and from leader measure to leader measure, at least for the transcripts. While these indicate the possibility of developing reliable measures of individual differences the results point to much more importance for the specific discussion sample than had been anticipated. To generalize both from these

correlations, and from the comments during the test administration, it would be important in any future trials of this test procedure to select discussion samples of obvious relevance to the situation of the respondents. Recorded bomber crew briefings or post-flight discussions, for example, might have been better.

Due to details of the scheduling of tests, the Group Discussion Samples could be correlated with the F-scale (1) for a larger number of cadets than with any of the other relevant tests administered at the same time. For 160 cases the r was $-.14$. The correlation with each of the six parts is shown in Table 2. The highest value, $-.18$, is significant at the .02 level, and indicates that the person who is more subordinate oriented in his evaluation of the groups, who in general sees the group members as not independent enough, but capable of leadership, is the more "authoritarian" by F-scale standards. To judge from evidence presented elsewhere (4) there is no reason to suspect that the F-scale is the more validly interpreted in this apparent disagreement, although it is considerably more reliable.

The indirect attitude test most similar to the Group Discussion Samples was the Leadership Knowledge Test(5) which presented multiple choice questions based upon leadership research, and diagnosed attitudes by the kinds of leader behavior implicitly recommended in the guesses as to right answers. *A priori* considerations would have led to the expectation of a higher correlation between these two than between any other pair of tests in the whole battery. The correlation for the 85 cases available is .00. Employing the leader items and the group items separately does not provide significant correlations, although the sum of the group items show a value of .14, not significant but in the expected direction.

One year later some of the 253 cadets tested at Lackland were tested again. Group Discussion Samples was not used, but it was possible to correlate the 1953 scores with the new test data. The sum of the leader items, the sum of the group items, and the over-all total all failed to show significant correlations, and the sign of the r with the group items had changed. Correlations of the two parts and total with the new F-scale scores were also insignificant.

At the time of the 1954 testing, reputational criteria were also collected (3). The Group Discussion Sample scores were correlated with some of these. All computed values were insignificant. The two highest values were for the group items, which correlated .16 with reputation among other cadets for being a good leader, and .15 with reputation for being potentially better liked by superiors than subordinates.

D. SUMMARY

Air Force pre-flight cadets were asked to criticize three samples of group discussions, one in movie form and the other two in the form of transcripts. The criticisms, expressed in terms of a series of checklist questions, were scored for tendencies to favor leader dominance of the discussion and other aspects of superior orientation. In terms of *a priori* considerations, the test was thought to be a plausible indirect measure of leadership attitudes. Analysis showed a lack of expected internal consistency, and a failure to correlate significantly with other attitude scales designed for the same purpose. No significant correlations were obtained with reputational criteria collected one year later.

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SEMANTIC IDIOSYNCRACY AS A METHOD IN THE STUDY OF ATTITUDES*¹

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A. PROBLEM

This paper reports on an exploratory effort to measure attitudes toward authority through individual differences in the implicit definition of the term "strict" as inferred from the coapplication of this term with others.

The great bulk of adjectives descriptive of human personality and behavior have rather well defined evaluational connotations. That is, in addition to their specific descriptive content, they also contain meanings of good or bad, approval or disapproval. However, there also exist a considerable number of adjectives, the specific content of which is reasonably well understood, but with ambiguous or variable affective content. Such terms may often have quite different evaluative connotations for different individuals. These differential evaluations would seem to provide clues as to attitudes toward the characteristics which the term describes.

An operational and indirect approach to such differential connotations or "private lexicons" can be achieved by noting the joint application of terms in the same situation and to the same object. It seems reasonable to assume that the more frequently two terms are coapplied the more nearly synonymous they are. Such functional synonymy could be measured by four-fold correlation coefficients, with antonyms being represented by high negative values, and synonyms by high positive values. Applying this general approach to the specific problem of diagnosing the individual affective connotations of a term of variable affective connotation, one would compute for the individuals the coapplication correlations between the variable term and other words of clear affective value. Individual differences in such correlations should be indicative of semantic idiosyncrasy and the more general attitude differences implied.

B. METHOD

As a part of a larger study attempting to measure generalized attitudes toward superiors and subordinates, attitudes such as might affect the be-

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havior of an intermediate in situations involving cross-pressures from the echelons above and below, it became possible to make a minor test of the utility of this inferential procedure.

One of the tests administered to a group of preflight cadets at Lackland Air Force Base, January, 1953, presented the respondent with photographs of 50 persons of varying age and sex, and asked that these persons be described by checking appropriate terms from a list of 30 descriptive adjectives. Analysis of these responses in terms of the kinds of characterizations made of the different age and sex categories has been reported elsewhere (4).

To get a measure of semantic idiosyncrasy relevant to the general attitude dimension under study it was necessary to find a term that dealt with interpersonal relations along authority lines and was at the same time relatively neutral or variable in evaluation. For practical purposes, it was also necessary to pick a term with a fairly high degree of use, to provide an adequate actuarial base for the indices to be computed. Terms like "bullying" or "rebellious" or "bossy" could not be used, because of their strong and negative connotations. Of the 30 terms in the list, "strict" seemed the most promising candidate for an exploratory investigation.

Next, there were needed terms which were clearly favorable and unfavorable, and which were not descriptive of the same behavior traits denoted by "strict." From the list, the terms "loyal" and "intelligent" were taken as unambiguously favorable, and "trouble-making" and "scheming" as unfavorable. The coapplication of each of these four terms with "strict" was then computed for each respondent. The basic data were the over-all frequency of use of each of the five terms over the 50 pictures, and the frequency of the joint usage of "strict" with each of the four evaluational terms. Thus to describe the synonymy of "strict" and "loyal" for a given respondent, the number of uses of "strict" was counted, the number of uses of "loyal," and the number of times they were both used to describe the same picture. To express the degree of association, the tetrachoric coefficient of correlation, as read from tables, was chosen, both because of the ease of computation, and because in theory, it would be free from systematic effects of differences in the frequency of term usage. Coefficients were computed indicating the degree of coapplication of "strict" with each of the four evaluative terms. These coefficients and a combination of them are used as scores assigned to each respondent in the analyses that follow.

The assumption that "strict" was variable in valuation seems supported by the range of tetrachoric coefficients obtained. For all four types the range was from practically -1.00 to $+1.00$. The average tetrachoric r 's

were: "strict-loyal" $-.06$; "strict-intelligent" $.14$; "strict-troublemaker" $.04$; "strict-scheming" $.14$. The assumptions involved in selecting the evaluative terms would lead to the anticipation that the "strict-loyal" values would be similar to the "strict-intelligent" ones. A correlation between the two for an N of 68 respondents was only $.25$. The correlation between the "strict-scheming" index and the "strict-troublemaker" index was $.63$, higher no doubt because of some denotative overlap between "scheming" and "troublemaker." The four other comparisons possible all provided negative correlations, as expected, with values of $-.24$, $-.37$, $-.38$, and $-.35$. In general, while low, these values significantly support the assumptions.

The four tetrachoric values have been combined into a single "strict-favorable" index for each respondent, adding the two coefficients for the favorable terms, and subtracting the two for the unfavorable ones. This index has been studied in its relationship to other available measures.

C. RESULTS AND DISCUSSION

Five weeks after the initial testing, reputational measures were collected from some of the cadets, describing their fellow cadets. These ratings were combined into three scores, on the basis of a factor analysis among them. For 60 cases, the "strict-favorable" score correlated $.02$ with reputation for wanting to please superiors; $-.17$ for wanting and having prestige; and $.19$ for wanting to please subordinates and wanting to have friends. None of the values is statistically significant, and the last two are not in the expected direction. On a separate group of 79 cases, the correlation of "strict-favorable" with superior orientation as measured by an attitude diagnostic information test of Leadership Knowledge (6) was $.17$, not significant but in the correct direction. For a group of 67 cadets, the correlation with the F scale measure of supposed authoritarian personality trends (1) is $.11$.

A greater part of the cadets were retested one year later, when they were in advanced flying training. From this testing come comparisons with the somewhat larger N of 105, since all cadets in the second testing were given the same limited set of tests. The correlation between the 1953 "strict plus" score and the 1954 test scores are as follows: Leadership Knowledge (5), F scale, $.17$; direct attitude test of superior-subordinate orientation (5), $.09$; direct attitude test of identification with discipline (5), $.10$. None of these values reach significance at the $.05$ level. At the time of the 1954 testing, a number of reputational criteria were collected (3). The correlation with reputation for leadership from classmates was $-.12$; with Military Aptitude Ratings by military instructors $-.04$; with number of demerits $.18$ ($N = 66$); with tendency to get higher Military Aptitude Ratings from

instructors than from classmates —.11. None of these values reach statistical significance, and most of them are not in the expected direction.

The lack of substantiating correlations with other measures designed to measure the same attitude is disappointing. However, this should not be taken as invalidating the approach for other purposes. This general absence of inter-measure agreement was characteristic of all approaches to the construct, and can thus be taken as indicating construct invalidity rather than methodological failure. The attitude topic does not seem to be one around which consistent general attitudes are organized. In addition, the present study was dependent upon the single term "strict," and thus does not represent an extensive check of the method even for this one topic. Internal statistical evidence supports the assumptions upon which the study was based, and the procedure seems worthy of rechecking under more optimal conditions.

D. SUMMARY

On a population of Air Force cadets, who had rated 50 photographed persons on a trait checklist, scores were computed indicating the tendency to use the trait "strict" in conjunction with favorable terms. Persons with higher scores on this were presumed to have a more favorable attitude toward authority. Internal correlational analysis confirmed the semantic assumptions involved. However, when an over-all "strict-favorable" score was correlated with other measures purporting to get at attitudes toward authority, no significant relationships were found.

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THE SENSE OF EFFECTIVENESS AND RESPONSE TO PUBLIC ISSUES*

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A. INTRODUCTION

Increasingly in recent years social scientists have concerned themselves with the investigation of the rôle of ego-level personality factors as mediating variables in the determination of social attitudes and behavior. It has been demonstrated that such behaviors as conformity to social norms (6), rigidity in problem-solving (2), ethnic prejudice (1), and political apathy (8) are linked to ego functions, and that the pattern of linkage is predictable from personality theory.

In efforts to determine the sources of active and passive responses to political affairs, a number of writers (8, 9) have isolated for attention a variable which has been called variously "sense of political efficacy," "feeling of personal responsibility," "psychological competence," and "potency." In general these all have to do with the individual's sense of participation in and reasonable influence over the environment. It is assumed that the individual who feels he can have some effect on the life of the community will be more active in community affairs—and that the individual who feels isolated and helpless will not have the "energy and courage" to take an active rôle (9). The sense of helplessness may be thought of as causing inactivity or as rationalizing the inactivity after the fact.

In several studies the sense of effectiveness has been shown to relate to political behavior. Mussen and Wyszinski (8) were able to distinguish apathetic from politically active individuals on measures of "passivity," "vague fears," and "lack of willingness to assume responsibility." In the study of the 1952 election conducted by the Survey Research Center, the authors found that a sense of political efficacy related to participation in the election

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even when critical demographic characteristics like education and income were controlled (4).

In the present article we report an analysis of the sense of political effectiveness in relation to responses to a variety of public issues and events. In general we are concerned with two predictions: first, that the sense of effectiveness is a general characteristic which influences an individual's response to a range of events, rather than a more specific reaction to a single issue. The second prediction is that the sense of effectiveness will bear a relationship both to overt behavioral responses and to psychological-attitudinal reactions. While previous studies have demonstrated its relationship to overt participation (4, 8), our expectation was that the sense of effectiveness would most clearly relate to the attentiveness and psychological energy with which the person confronted issues, and that its relation to more overt actions might be attenuated by extraneous factors entering the scene between motivation and behavior.

B. THE EMPIRICAL STUDY

An unusual combination of circumstances makes it possible in the present case to analyze the relationship of the sense of effectiveness to a fairly broad range of issues. The study from which our measure of effectiveness² derives was a survey conducted in the Detroit metropolitan area. The sample used consisted of labor force members of a sample originally selected and interviewed in the first Detroit Area Study survey.³ This reinterview design makes available for analysis responses to two questionnaires having quite distinct objectives and content emphases.

Our base sample—for which both interviews are available—consists of 316 labor force members from a probability sample of Detroit. An attrition of 10 per cent occurred in the sample between the two interviews.

Interviews were conducted in respondents' homes. Reinterviews were in all cases taken by members of the Center's permanent field staff, and the original interviews were conducted about equally often by graduate students and staff interviewers.

²Here and in later sections of this report, the term "effectiveness" refers to the person's conscious feeling that he can have a measure of effect on public affairs, and is not meant to imply the level of skill with which he actually enters the political process. The substitution of terms is made in the interest of a simpler presentation, but the reader is requested to bear in mind the limitation of our measure.

³The Detroit Area Study is a graduate training program and research facility associated with the Sociology Department and the Survey Research Center of the University of Michigan. At the time of the first survey, from which we have used selected materials, Professor Ronald Freedman and Morris Axelrod directed the project.

1. *Measurement of the Sense of Political Effectiveness*

The central question on which the effectiveness index was based reads as follows: "How much of an influence do you think the average citizen can have on decisions like these (made by the government)?"

Respondents were placed in one of two groups depending on their answers to this question. The first group consisted of those who thought the average citizen could have "quite a bit" or "some" influence; the second included those who felt the citizen has "very little" or "no" power to affect government policy.

To insure that the questions on citizen influence were meaningful to respondents, and to provide a concrete problem context, we asked these questions after a series of items on two problems about which government leaders must make decisions. The problems were the threat of war and the high cost of living. Following this discussion we asked whether citizens could influence government decisions on problems like *these*.

In the course of the problem discussions, a good many individuals spontaneously alluded to their own sense of ineffectiveness. For example, when asked whether they were personally concerned about the threat of war, some respondents said they were not concerned about it because there was nothing they could do about it. Some respondents felt concerned about war or inflation, but added that these things were the business of government, and there was nothing they personally could do about the situation.

Any such spontaneous reference to feeling ineffective—coming as it did before the question of influence was raised directly—was taken as an indication of the salience of this factor in the individual's psychological makeup. We therefore added a third step to the effectiveness measure—to include all individuals who gave a negative answer to the direct question and who, in addition, referred to their own lack of power in the earlier discussions. The three effectiveness groups and their frequencies are presented in Table 1.

In addition to these three groups, there were nine individuals who were excluded from the analysis because they made early reference to their sense of powerlessness, but contradicted this statement in answer to the direct question. Thirteen other subjects were excluded because they failed to answer one or another of the questions from which we derived information for the index.

2. *The Problem of Status Controls*

A major hypothesis of this study was that the sense of effectiveness would be related to the level of attention and psychological energy with which the individual responds to public events. Since such variables are often closely

tied to demographic characteristics like education and income, and since previous studies had found the sense of effectiveness to be related to these same factors (3, 4), we had planned originally to control for status in our analysis.

TABLE 1
EFFECTIVENESS CATEGORIES AND THEIR FREQUENCIES

Category and definition	Number
1. <i>High effectiveness</i> Feel that the average citizen can have "quite a lot" or "some" influence on government decisions.	102
2. <i>Medium effectiveness</i> Feel that the average citizen can have "very little" or "no" influence.	123
3. <i>Low effectiveness</i> Feel that the average citizen can have "little" or "no" influence, and raise their own ineffectiveness in earlier discussion of issues.	69
Total	294

Preliminary analysis indicated, however, that our measure of effectiveness did not relate significantly to status measures. In Table 2 it will be seen that while there is some tendency for the higher effectiveness groups to have more education and higher income, the relationships are insubstantial.

There are several possible explanations for this difference between our results and those of previous analyses. The first is that our measure is not identical to those used in other research. Our inclusion of spontaneous references to respondents' lack of influence may change our measure enough to explain the unique absence of relations to demographic factors. We also phrased the direct question in terms of the average citizen's, rather than the respondent's own, influence. Another possible explanation, however, lies in the nature of the population we sampled.

Our respondents were all drawn from the labor force of Detroit. This selection tended to reduce the range of demographic variables. Detroit is a high wage-rate city, and, in addition, our exclusion of the permanently unemployed or retired from our sample meant that we interviewed no people of extremely low income, and may have excluded some of the very high as well.⁴ By reducing the range of a variable, we obtain a measure of con-

⁴While it is not possible to make a definitive test of the extent to which the nature of our sample accounted for the absence of relationship between status and the sense of effectiveness, we were able to demonstrate that this factor had some influence. Using as a base data from the political study previously mentioned (4), we selected from a national sample all interviews taken in metropolitan areas with

control over it, and we also reduce the chances of significant relationships occurring when the variable is run against any other.

The fact that demographic factors were not significantly related to the effectiveness measure simplified the analysis, since no special status controls were necessary in testing relationships between effectiveness and attitudinal variables.

TABLE 2
RELATION BETWEEN THE SENSE OF EFFECTIVENESS AND CERTAIN DEMOGRAPHIC MEASURES

Demographic measure	Effectiveness			X ²	P level
	High (N = 102)	Medium (N = 122)	Low (N = 69)		
<i>Education</i>				5.24 (df = 4)	< .30 > .20
Grammar School	21%	34%	29%		
High School	60	49	52		
College	19	17	19		
	100%	100%	100%		
<i>Income</i>				3.24 (df = 6)	< .80 > .70
Under \$3,000	13%	11%	16%		
\$3,000-\$4,999	50	57	53		
\$5,000-\$6,999	25	22	24		
\$7,000 and over	12	10	7		
	100%	100%	100%		
<i>Occupation*</i>				4.37 (df = 4)	< .70 > .50
Professional	6%	7%	4%		
Business	10	10	9		
White Collar	9	5	7		
Sales and Clerical	17	18	18		
Manual: industrial	33	41	35		
Manual: non-industrial	22	13	23		
Unemployed	3	5	4		
Not ascertained	—	1	—		
	100%	100%	100%		

*Professional, Business, and White Collar were grouped in one category. Sales and Clerical formed the second category, Manual industrial the third, and Manual non-industrial the fourth.

C. THE SENSE OF EFFECTIVENESS AND OTHER ATTITUDES TOWARD CITIZEN PARTICIPATION

The first series of questions we related to the Effectiveness index dealt with other aspects of citizen participation. In various forms these questions

employed persons. In this group, compared to the full national sample, there was a reduction in the relationship between status and "political efficacy." Even in this case the range in status measures was larger than the range for our Detroit labor force sample.

asked the respondent to what extent he felt the ordinary citizen can have a significant voice in decisions made by his government, and what the channels are for expressing his views. The questions are, of course, very close to the criteria used in defining effectiveness, and relationships which appear are therefore not in any sense remarkable. They do, however, provide a validation for the effectiveness measure to the extent that they indicate a consistent predictability provided by the index.

The questions on citizen-government relations are presented below. Throughout this article items which appeared in the original interview are marked with an asterisk.

1. Would you say the amount of influence the average citizen has now is just about right, or would you like to see him have more, or less, or what?
2. How about you? Are you satisfied or would you want more of a voice in these decisions?
3. When the government has to make decisions, do you think they pay more attention to what the average person wants, or to what special groups want, like businessmen or labor unions?
- *4. Some people feel that elected officials, like congressmen or council members, don't run the government the way ordinary citizens think they should, other people feel they do. How do you feel about this?
5. What are some of the things ordinary citizens can do to have an influence on government decisions? Anything else?
6. What about belonging to an organization that takes a stand on problems like these? Do you think that belonging to such an organization helps people to have more of a say in government decisions, or not?
7. How about writing letters to congressmen, or signing petitions, and things like that? Does that do any good?
8. Do you think the people who make decisions in our government pay much attention to this kind (these kinds) of thing, or not?
- *9. For problems like this, how much good can people do by making their opinions known to government officials by voting or in some other way?

A summary of responses to these questions appears in Table 3. From these data several generalizations seem permissible—first, that the index of effectiveness is a valid indicator of an individual's sense of having available means for affecting the political process; and second, that people who feel effective have a more differentiated and detailed understanding of the mechanisms by which a citizen can exert his influence on government policy.

People who feel effective in relation to public affairs are more likely to indicate satisfaction with their own power (Question 1) and the power held by the average citizen (Question 2). Low Effectives not only feel more

TABLE 3
RELATION BETWEEN THE SENSE OF EFFECTIVENESS AND RESPONSES TO QUESTIONS ON
THE RELATION OF THE CITIZEN TO GOVERNMENT

Questions and responses	Effectiveness			X ²	P level
	High (N = 102)	Medium (N = 122)	Low (N = 69)		
<i>Question 1</i>					
Citizen's influence satisfactory	48%	64%	64%	11.60 (df = 4)	< .05
Citizen's influence unsatisfactory	47	28	20		
No opinion	5	8	16		
<i>Question 2</i>					
Satisfied with own power	51%	37%	32%	8.05 (df = 4)	< .10 > .05
Dissatisfied with own power	41	55	58		
Undecided, no opinion	8	8	10		
<i>Question 3</i>					
Average person attended	20%	10%	4%	12.10 (df = 4)	< .05
Special groups attended	68	71	83		
Undecided, no opinion	12	19	13		
<i>Question 4*</i>					
Government run for ordinary citizens	58%	42%	22%	8.08 (df = 4)	< .10 > .05
Government <i>not</i> run for ordinary citizens	13	27	37		
Undecided, no opinion	29	31	41		
<i>Question 5</i>					
Mention a mechanism other than voting	79%	70%	56%	10.02 (df = 4)	< .05
Mention only voting	13	14	22		
Know of no mechanisms	8	16	22		
<i>Question 6</i>					
Organizational channel previously mentioned	37%	34%	27%	18.11 (df = 4)	< .01
Organizational channel helpful	52	42	35		
Organizational channel not helpful	11	24	38		
<i>Question 7</i>					
Letters, petitions previously mentioned	61%	51%	47%	12.01 (df = 4)	< .05
Letters, petitions helpful	23	23	15		
Letters, petitions not helpful	16	26	38		
<i>Question 8**</i>					
Leaders attend citizen expression	64%	49%	31%	11.26 (df = 4)	< .05
Leaders ignore citizen expression	4	21	20		
Undecided, no opinion	32	30	39		
<i>Question 9*</i>					
Citizen expression helpful	68%	56%	41%	8.12 (df = 4)	< .10 > .05
Citizen expression little or no help	16	28	35		
Undecided, no opinion	16	16	24		

*These questions, from the Detroit Area Study, were asked of sub-samples of the total group. The numbers for our groups on Question 4 should read: High = 38; Medium = 60; Low = 32. Question 9 was asked of the following numbers: High = 64; Medium = 63; Low = 37.

**This question, which followed number 5 in the interview, was asked only of those individuals who mentioned some mechanism for citizen expression. The sizes of groups in this case are: High = 94; Medium = 104; Low = 54.

helpless in relation to government decisions, they are also less likely to know of—or, at any rate, to mention—specific means of influence available to the ordinary person (Questions 5, 6, and 7). They are more likely to mention no mechanism at all, or only voting; while individuals who score higher on effectiveness more often suggest a direct method of affecting decisions—either alone or in combination with voting.

One might at this point be tempted to conclude that the Low Effectiveness group comprises individuals who do not have much information about political channels and that their dissatisfaction stems from this lack of sophistication. However, when knowledge of mechanisms is controlled—that is, when we consider only individuals who do recognize means of political action available to ordinary citizens—we find (Question 8) that those who feel powerless are less likely than others to have faith in the mechanisms they suggest. When asked whether they think government decision-makers are attentive to the opinions citizens register via these channels (Question 9), respondents who feel ineffective are pessimistic about their representatives. They, more often than High Effectives, think that government leaders are primarily responsive to special pressure groups rather than to average citizens (Questions 3 and 4).

In a sense, the differential responses to these last questions are the best possible validation of the effectiveness groupings. If effectiveness means a feeling of ability to influence government decisions, the ultimate block to citizen control would reside in the disregarding of citizens' actions by decision-makers. Their ability to ignore the wishes of citizens, if accepted, can only increase the feeling of impotence in these matters, which is presumed to characterize the low effectiveness group, and discourage the very action necessary to overcome the block.

D. THE SENSE OF EFFECTIVENESS AND ATTITUDINAL RESPONSE TO PUBLIC ISSUES

We speculated that the sense of effectiveness would be related to attitudinal responses to public issues. If an individual recognizes a public problem and feels able to have an influence on such phenomena, he is in a relatively good position for problem solving—at least at a symbolic level. We would expect him to manifest the attentive, constructive, differentiated thought about the problem which such behavior implies.

The individual who, on the other hand, feels that such affairs are beyond his power sphere, is in a difficult position. While he cannot proceed toward problem solving (since his efforts are by definition fruitless), the problem

does not disappear. It remains a problem—discomforting or even threatening—and is, in addition, conflict laden since it stands as a reminder of his own weakness. We would expect that a person under these conditions might defend himself against the conflict associated with public affairs by some method of denial. If such is the case, these respondents should tend consistently to avoid thinking about public issues and as a consequence show gross, undifferentiated thinking and indecisiveness of attitudes when confronted with issues.

The largest number of issues-questions dealt with implications of atomic energy. Respondents were asked the following:

11. Now let's talk a little about some of the problems facing our country. One problem we hear about is the possibility of an atomic war. Do you think this is: (1) very important—the country's number one problem; (2) quite important—few problems are more important for our country; (3) not too important—many other problems are just as important for our country; (4) not at all important?

12. How about you? Would you say you're very concerned about it, not at all concerned, or what? How do you mean?

13. What do you think could be done to cut down the chances of an atomic war?

14. Our government is now spending about a billion dollars to build a super atom bomb (hydrogen bomb). Do you think this is the best way to spend this money to cut down the chances of war, or should we do other things with it? How do you mean?

15. Considering all its uses in peace and war, do you think we are better off for having discovered atomic energy or would we be better off if no one had discovered it? Why do you say that?

Responses to this series are presented in Table 4. Our measure of effectiveness, we find, relates consistently to the level of energy reflected in the answers. The low effectiveness group is less concerned about the problem of atomic war (Question 12), and shows less differentiated thought about the problem. When asked to suggest a method for reducing the chances of war, *Lows* more often say that no solution is possible or that they don't know what could be done to minimize the danger (Question 13).

When a proposed solution is offered them, respondents low on effectiveness reveal an indecisiveness in their reactions. They are less likely than others to state a definite opinion about the H-bomb development as a means of solving the threat of war (Question 14).

The results to this point are consistent with either of two alternative hypotheses: (a) that low effectiveness withdraw from problematic or threatening public events, or (b) that they are simply not as well informed or facile

in discussing the problem because it has not impressed them as an important or realistic one. Two further results, however, favor the first hypothesis. We find that low effectiveness least often make spontaneous remarks to the effect that war is not likely to occur. And when asked to make an over-all

TABLE 4
RELATION BETWEEN THE SENSE OF EFFECTIVENESS AND RESPONSES TO QUESTIONS ON THE IMPLICATIONS OF ATOMIC ENERGY

Questions and responses	Effectiveness			X ²	P level
	High (N = 102)	Medium (N = 122)	Low (N = 69)		
<i>Question 11*</i>					
War is most important	54%	44%	32%	8.62 (df = 4)	< .10 > .05
War is quite important	36	33	34		
War not too important, not at all important	9	23	28		
Undecided, no opinion	1		6		
<i>Question 12</i>					
Very concerned about war	32%	24%	5%	26.72 (df = 4)	< .01
Somewhat concerned	65	65	72		
Not at all concerned	3	9	20		
Undecided, no commitment		2	3		
<i>Question 13</i>					
Suggest some solution	61%	54%	42%	5.70 (df = 2)	< .10 > .05
Do not suggest a solution	39	46	58		
<i>Question 14*</i>					
Hydrogen project best solution	64%	47%	40%	11.47 (df = 2)	< .05
Suggest alternative solution	24	17	28		
Undecided, no opinion	12	35	32		
<i>Question 15*</i>					
Atomic energy good	58%	55%	30%	11.46 (df = 4)	< .05
Atomic energy bad	32	30	54		
Undecided, no opinion	10	15	26		

*These questions were asked of a sub-sample of the total group of respondents. The group sizes are: High = 75; Medium = 93; Low = 50.

evaluation of the discovery of atomic energy, they are more negative than other respondents. Were they merely unaware of the threat aspect of the development—had the possibility of war not impinged on their consciousness—there would be no reason to expect this negative reaction to atomic energy. It appears that they are aware of the problem—so aware, in fact, that they would relinquish potential benefits in order to be rid of the threat—and are attempting to avoid it by withdrawing attention.

Two other problem issues were discussed with respondents. On the problem of inflation we asked:

21. What about the cost of living? Some people feel *this* is the most important problem facing our country. Others feel there are more important problems. How important do *you* feel it is for the country?

22. How about in your case—would you say this problem bothers you a lot, not at all, or what? Why is that?

23. Who do you think could do something to solve this problem (cost of living)?

And on unemployment:

*31. When we talk to people about problems in and around Detroit, one of the things they mention often is unemployment. Which persons or groups do you think could do something about this problem?

On the problem of the cost of living, we find that effectiveness groups do not differ in their evaluation of inflation as a national problem, and that ineffective respondents are somewhat more personally concerned about this problem than are those who feel influential in the political sphere (Table 5).

These two findings, taken alone, seem to contradict our hypothesis that effective individuals will be more attentive and responsive to public issues. They are very different from findings in the area of atomic energy—those who feel effective are more likely to recognize and indicate personal concern about the threat of atomic war.

Two additional results suggest that the cost of living as an issue enlists two levels of response, and that the concern which our ineffectives reveal is not necessarily an indication that they are committing a high level of psychological energy to public affairs. First, an analysis of the reasons for concern or lack of concern about prices indicates that ineffective persons more often give reasons in which the referent is exclusively personal. So, for example, the ineffective respondent is more likely to say he is concerned because "I get a hard time making ends meet, or that he is *not* concerned because "I get a cost of living raise when prices go up, so I'm not suffering." Those who score high on effectiveness, on the other hand, are more often concerned with inflation as a national issue or refer to the effect of the problem on both their own lives and on the nation as a whole.

While, then, the low group is concerned about the cost of living, it seems that this issue is used by ineffective individuals as a means of expressing personal frustrations, and that their concern is not necessarily indicative of a highly alert and energetic response to public problems as such.

The second result—responses to the question on solution agents—sup-

ports this interpretation. We find, as in the problem of war-threat, that those with a strong feeling of effectiveness are significantly more likely to make suggestions toward a solution. Though the ineffective individual does

TABLE 5
RELATION BETWEEN THE SENSE OF EFFECTIVENESS AND RESPONSES TO QUESTIONS ON
INFLATION AND UNEMPLOYMENT

Questions and responses	Effectiveness			X ²	P level
	High (N = 102) (N	Medium (N = 122) (N	Low (N = 69) (N		
<i>Question 21*</i>					
Inflation is most im- portant problem	14%	14%	19%	.94 (df = 4)	< .95 > .90
Inflation is quite important	75	75	73		
Inflation is not very, not at all important	11	11	8		
<i>Question 22</i>					
Very concerned about cost of living	40%	35%	57%	10.51 (df = 4)	< .05
Somewhat concerned about cost of living	21	24	29		
Not concerned about cost of living	39	40	23		
<i>Reasons for concern</i>					
Refer exclusively to personal reasons	35%	53%	49%	7.66 (df = 2)	< .05
Refer to some non- personal reason	65	47	51		
<i>Question 23*</i>					
Suggest solution agent	91%	86%	70%	10.09 (df = 2)	< .01
Do not suggest solution agent	9	14	30		
<i>Question 31**</i>					
Suggest solution agent	86%	71%	57%	10.39 (df = 2)	< .01
Do not suggest solution agent	14	29	43		

*See footnote *, Table 4.

**The numbers on this item from the Detroit Area Study are: High = 64; Medium = 63; Low = 37.

not deny the problem of inflation, he is not as likely to take steps toward a symbolic solution. The latter behavior demands relatively greater energy than simply responding to the problem with a sense of personal oppression.

When the issue of unemployment was raised and respondents were asked who might solve this problem, we again find in the High group a livelier response to the issue.

In addition to these reactions to specific problems, we have two pieces of information on respondents' psychological reaction to political affairs in general. The first consists of answers to the question: "How often do you discuss politics?" The second is a coder rating on interest in public affairs, based on the level of interest and enthusiasm with which the individual answered political questions in the Detroit Area Study. Results on these two measures for our Effectiveness groups appear in Table 6. In both cases the

TABLE 6
RELATION BETWEEN THE SENSE OF EFFECTIVENESS AND INTEREST IN POLITICAL AFFAIRS

Item	Effectiveness			X ²	P level
	High (N = 102)	Medium (N = 122)	Low (N = 69)		
<i>Respondent discusses politics</i>				8.60 (df = 4)	<.10 >.05
Often	27%	18%	14%		
Fairly often	38	31	37		
Infrequently, never	35	51	49		
<i>Respondent's rating on general political interest</i>				17.08 (df = 6)	< .01
Very interested	29%	12%	12%		
Interested	25	29	22		
Slightly interested	28	21	26		
Disinterested	18	38	40		

Index is positively related to responsiveness to political events. The high group reports more frequent discussion of politics, and is judged by coders to have a more active interest in political matters.

E. THE SENSE OF EFFECTIVENESS AND POLITICAL BEHAVIOR

We have the following information about our subjects' overt political behavior:

1. Whether they are registered to vote.
2. Whether they voted in a presidential and a congressional election.
3. Whether they usually vote a straight or split ticket.
4. Whether they have ever contributed to an election campaign.
5. Whether they have ever personally contacted a public official.
6. Scores on an over-all index of political activity.

Analysis of these materials reveals that on four of the six items, the sense of effectiveness is positively related to level of activity. High Effectives are more often registered voters, they have a more consistent record of voting (albeit on a very limited measure), more often vote a split ticket, and are

rated higher on an over-all index of political activity. The Effectiveness groups do not differ consistently or significantly in campaign activity or in having personally contacted public officials.

One of the items in Table 7—usual vote type—may be questioned as a measure of overt activity. In a sense the question of straight or split ticket

TABLE 7
RELATION BETWEEN THE SENSE OF EFFECTIVENESS AND OVERT POLITICAL PARTICIPATION

Item	Effectiveness			X ²	P level
	High (N = 102)	Medium (N = 122)	Low (N = 69)		
<i>Voter registration</i>					
Registered	77%	60%	67%	7.56 (df = 2)	< .05
Not registered	23	40	33		
<i>Voting record</i>					
Voted in both the presidential and congressional elections	60%	41%	38%	12.95 (df = 4)	< .05
Voted in only one election	19	22	27		
Voted in neither election	21	37	34		
<i>Usual vote type</i>					
Straight ticket	33%	46%	52%	7.45 (df = 2)	< .05
Split ticket	67	54	48		
<i>Participation in campaign</i>					
Have participated	24%	13%	16%	3.97 (df = 2)	< .20 > .10
Have not participated	76	87	84		
<i>Contact with officials</i>					
Have contacted officials	26%	15%	24%	4.23 (df = 2)	< .20 > .10
Have never contacted officials	74	85	76		
<i>Index of political action</i>					
Very active	25%	12%	17%	13.82 (df = 6)	< .05
Active	24	25	18		
Slightly active	36	30	38		
Inactive	15	33	27		

voting is a measure of style rather than extent of behavior. On the basis of previous work (4), however, it seems justified to interpret split balloting as a more energetic and differentiated response to an election than a straight ticket vote. For all of these individuals, the act of voting is given, but the nature of the act illuminates the psychological aspect of the response.

F. SUMMARY AND DISCUSSION

On three distinct public issues, we have seen that the nature of the individual's attitudinal response is influenced by his sense of political effective-

ness. Respondents who feel they can have a meaningful rôle in public decisions are more alert to national issues and reveal more constructive and differentiated thought about them.

Ineffective respondents react to the problem of war threat with avoidance. The issues of rising living costs—a problem of more immediate consequences and greater direct impact on daily life—elicits greater personal concern from those who feel ineffective than from more sanguine individuals. We have seen, however, that this concern is of a very personal kind, and that it does not stimulate problem-solving behavior.

In an analysis of other materials from this study (5), we reported that the sense of political effectiveness was highly related to a sense of thwart and insecurity in the personal sphere. We found that although Effectiveness groupings do not differ significantly in socio-economic position, ineffective people more often feel insecure financially and unsure or frustrated about their job prospects. We suggested in that context that public affairs are to some extent employed by people with a sense of impotence as a vehicle for the expression of personal frustrations. The problem of inflation, we would suggest, is more amenable to highly personal interpretation than is war-threat, and thus more likely to be used for a direct expression of a sense of personal oppression. War-threat—uncompromisingly national in scope and implications—serves this function less easily, and ineffective individuals respond to this awesome problem by avoidance.

Our *low* group less often suggest solutions for any of the three problems raised, and they give the highest proportion of "don't know" responses to questions. They discuss political affairs less often and score low on a general rating of interest in public affairs.

The sense of effectiveness also yielded positive relationships to voting, voter registration, and an over-all index of political activity. But this variable bears no significant relation to use of more direct influence attempts—political campaigning and contacting public officials.

Though the High Effectives are more likely to suggest such activities, and to express greater faith in these democratic mechanisms (Table 2), they nevertheless use them only about as often as people who feel ineffective. There are, of course, many factors in addition to a psychological acceptance of channels which determine whether or not an individual will engage in a particular action.

Assessing the results of this study in light of hypotheses posed at the beginning of this report, we conclude that the sense of effectiveness has a predictive value that extends beyond the individual's response to any single

issue. It appears to influence the level of energy with which the individual confronts public affairs in general. If this interpretation is correct, the sense of effectiveness clearly becomes a factor to be reckoned with in public campaigns designed to influence reactions to particular new programs or events.

The second hypothesis relating overt participation in politics to the sense of effectiveness has not been as clearly tested by our analysis. Our findings are fragmentary: While four of six measures of overt participation yielded significant relations to effectiveness, one of these is only tenuously admissible as a measure of degree of overt participation. And the over-all index of political activity does not provide an independent test since it is based on behaviors which were analyzed individually. The influence of the sense of effectiveness on voting behavior has been established, but its relation to other forms of political activity requires further exploration.

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STUDENT RATINGS OF POPULARITY AND SCHOLASTIC ABILITY OF THEIR PEERS AND ACTUAL SCHOLASTIC PERFORMANCES OF THOSE PEERS*

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A. PROBLEM

Are their relationships among student ratings of scholastic ability and popularity of their peers and actual scholastic performances of those peers? If so, how strong are these relationships; i.e., is the well-liked student usually perceived by his fellows as the "good" student, and is he a "good" student when his performance is measured objectively? When peers are ranked on scholastic ability and popularity and these rankings are compared with their rankings in actual scholastic performance, is any agreement observed among these three sets of ranks systematic or a matter of chance? The present investigation was concerned with these questions.

B. SUBJECTS AND PROCEDURE

The data for the study were collected at a co-educational teacher-training institution in northern Louisiana in the latter part of the Spring Semester, 1955. Two classes of 37 students (a course in teaching methods) and 21 students (a course in educational psychology) were studied and their results were analyzed separately. The methods class was composed primarily of juniors, and since all of them had completed at least two semesters of psychology, they were presumed to have at least some psychological sophistication. The psychology class was composed primarily of sophomores who had completed the first semester of psychology and also were presumed to have at least some psychological sophistication. However, the evidence would seem to indicate that the degree of psychological sophistication of raters may not be of great significance (1, 2, 3, 7).

Students were asked to rate every other student in the class from best liked to least liked by assignment of numerical ranks. For example, in the methods class of 37 students each person rated his 36 peers in numerical order from one to 36, with the person most liked being ranked one and the person least liked being ranked 36. A forced-choice situation was employed

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such that no ties were allowed in a given individual's rating; i.e., two different peers could not be assigned identical ranks by the same rater. There were no self-ratings.

Two weeks later the students were asked to rate their peers in terms of most to least scholastic ability. The time interval between judgments was important in order to lessen the influence of memory of how different individuals had been ranked on the previous occasion. The method of ranking was the same as that employed on the popularity scale.

The students in teaching methods rated their peers on popularity first and scholastic ability next. This procedure was reversed in the psychology class. Prior to the ratings it was ascertained that all members of each class knew their peers by name and had had opportunities to observe these peers in academic situations. The actual performance of the students was determined on the basis of numerical grades made in that course during the semester on objective type exams.

The students were assigned final ranks in popularity and in scholastic performance on the basis of the pooled rankings of their peers on each variable, i.e., the student with the lowest composite numerical score on popularity was ranked one, the student with the score immediately greater, two, and so on to the student with the highest composite numerical score on popularity, who was ranked lowest in popularity. The same procedure was followed in determining ranks from peer ratings of scholastic performances. Student ranks on actual performance were determined on the basis of their composite numerical score made during the semester in the methods or the psychology class.

C. RESULTS AND DISCUSSION

Orders of merit may be transmuted into units of amount or "scores" if the assumption of normality of the trait involved can justifiably be made. Rankings of peers on popularity and scholastic ability and the actual scholastic performances of those peers involve individuals and their psychological and educational products, and since individual products of this type usually are distributed normally, the assumption of normality of distribution would seem to be justified. The orders of merit were transmuted, therefore, into scores, using Hull's (5) method.

Product-moment coefficients of correlation for the transmuted ranks on popularity and perceived scholastic ability, popularity and actual performance, and perceived scholastic ability and actual performance are listed separately for the methods and psychology classes, respectively, in Tables 1 and 2.

Significance levels for these correlations also are included in the tables. The correlations between popularity and actual performance were insignificant in both classes. All other correlations were significant.

TABLE 1
INTERCORRELATIONS AND THEIR SIGNIFICANCE LEVELS FOR TRANSMUTED RANKS ON POPULARITY, PERCEIVED AND ACTUAL SCHOLASTIC PERFORMANCE IN THE METHODS CLASS

Variables	<i>r</i>	<i>p</i>
Popularity and perceived performance	.52	.01
Popularity and actual performance	.20	>.05
Perceived performance and actual performance	.64	.01

TABLE 2
INTERCORRELATIONS AND THEIR SIGNIFICANCE LEVELS FOR TRANSMUTED RANKS ON POPULARITY, PERCEIVED AND ACTUAL SCHOLASTIC PERFORMANCE IN THE PSYCHOLOGY CLASS

Variables	<i>r</i>	<i>p</i>
Popularity and perceived performance	.93	.01
Popularity and actual performance	.40	>.05
Perceived performance and actual performance	.71	.01

The data of this study were transmuted from ranks into scores such that the degree of agreement between any two variables could be determined by the product-moment correlation method. The coefficient of concordance (6) may be used to determine the degree of agreement among *m* sets of *n* ranks. It was used, therefore, to measure for each class the degree of agreement among the three sets of ranks. The results of the analysis are shown in Table 3.

TABLE 3
COEFFICIENTS OF CONCORDANCE (*Wc*) AND CHI SQUARE TESTS FOR RANKINGS ON POPULARITY, PERCEIVED AND ACTUAL SCHOLASTIC PERFORMANCE IN THE METHODS AND PSYCHOLOGY CLASSES

Class	<i>Wc</i>	X^2r	<i>df</i>	<i>p</i>
Methods	.65	69.83	36	.01
Psychology	.81	48.64	20	.01

The coefficients of concordance of .65 for the methods class and .81 for the psychology class indicated the degree of agreement among the three sets of ranks in each class. However, it was important to test some null hypothesis about the agreement. The null hypothesis tested in this case was that any agreement observed among the rankings was a matter of chance. This hypothesis was rejected, since the obtained chi-square values of 69.83 and 48.64 for the methods and psychology classes, respectively, were such

that they would occur less than one per cent of the time if the agreement among the rankings was a matter of chance alone.

Ranking of individuals is not independent of basic theoretical assumptions regarding the nature of the individual and his behavior. Since the rankings of this study represented individuals and their psychological and educational products, it was assumed that these rankings were normally distributed. The implication of the assumption of normality of distribution in a trait is that differences at extremes of the trait are relatively much greater than differences around the mean. Thus individuals who were ranked at both extremes of the distribution were likely to be the ones who were definitely popular or unpopular with their peers and those individuals who were ranked close to the means of the distributions were likely to be the ones who were regarded indifferently by their peers or toward whom their peers reacted with ambivalence.

The actual raw data revealed that 23 of the 37 students in the methods class agreed in their ratings of the most unpopular student and 20 were in agreement in their rating of the most popular student. Only in the extreme cases was agreement as high and was in marked contrast with the finding that for the middle 50 per cent of the cases (Ranks 9 to 27), the highest number of peers in agreement in ranking any individual was 11 (Rank 20).

A similar relationship held in the case of the psychology class and with both classes when students ranked their peers on scholastic performance. This repeatedly found relationship would seem to indicate greater unanimity among the raters in ranking extremely popular or unpopular peers and greater difficulty in discriminating among peers whose ranks occurred in the middle range of cases.

A significantly high correlation between two variables does not indicate any necessary causal connection between them. Thus the significantly high agreement in both classes between student ratings of popularity and scholastic performance of their peers and between perceived scholastic performance and actual performance of those peers afforded no occasion to conclude that the relationship between any of these variables is causal. However, these high correlations did allow for speculation as to whether these variables were in fact causally related. It appears reasonable that student ratings of any given individual on scholastic performance may be influenced by how well those students like that individual. In this connection, Slawson (8) has found evidence indicating that thorough acquaintance may distort judgment because of extreme like or dislike.

Hollingsworth (4) has found evidence indicating that individuals who

deviate widely in a plus or minus direction from the mean of human intelligence tend to become personality "isolates." Hence, the highly intelligent or the very dull student would not be likely to be the very popular student. If the foregoing statement is accepted, and if intelligence and actual scholastic performance as determined by grades made in school are positively and highly correlated, then it would seem reasonable to fail to find significant positive correlation between popularity and actual performance. In the present study the only correlation in each class which was not significant at the one per cent level of confidence was that between popularity and actual performance.

The coefficients of concordance, significant at the one per cent level of confidence, indicated a high degree of agreement among the three sets of ranks. However, this high agreement does not necessarily mean that the order established by the rankings is correct or that the method of ranking itself is reliable because the agreement of raters with respect to an order may be influenced by some outside biasing factor.

In the light of the findings of this study, the following summary statements would seem to obtain:

1. There is a high positive relationship between how well a student is liked and how highly that student is rated on scholastic performance by his peers.
2. There is a high positive relationship between how a student is rated on scholastic performance by his peers and how well that student actually performs scholastically.
3. There is no significantly high relationship between the popularity and actual scholastic performance of a given student.
4. There is significantly high agreement among student rankings of popularity and scholastic performance of their peers and rankings of those peers on actual scholastic performance.

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THE EFFECT OF RELIGIOUS BACKGROUND ON MODES OF HANDLING ANGER*

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A. PROBLEM

The present study represents an attempt to determine the effects of religious training on the way in which people come to express anger. The encouragement of love and kindness in all relationships is central in Christian teachings. At the same time, the expression of hate, or anger, towards anyone is discouraged. These goals in interpersonal relationships are generally commendable, as making for greater good will among men. Whether or not the individual's own emotional well-being is also helped, has been a much debated question. Certain conservative Christian groups condemn feelings of anger. When a member of one of these groups becomes angry, it is regarded as a sin, an indication of inadequate faith; and it fosters the development of guilt.

There are many Biblical quotations that express attitudes towards anger. The teachings of Churches vary in reference to these statements. Conservative Christians are quite literal in their interpretations of scriptures such as the following:

You have heard it said, "An eye for an eye and a tooth for a tooth."
But I say to you, Do not resist one who is evil. But if anyone strikes you on the right cheek, turn to him the other also; and if anyone would sue you and take your coat, let him have your cloak as well.

You have heard that it was said, "You shall love your neighbor and hate your enemy." But I say to you, Love your enemies and pray for those who persecute you. *Matthew 5:38-46 (6)*.

Another example of how many people strive to avoid anger is expressed in the hymn:

Angry words, Oh let them never
From the tongue unbridled slip
May the heart's best impulse ever
Check them e'er they soil the lip.

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These phrases exhort one consciously to avoid any outward expression of anger. The next scriptural text, however, illustrates the seriousness with which hostile thoughts are regarded.

And anyone who hates his brother is a murderer, and you know no murderer has eternal life abiding in him. *1 John 3:15 (6)*.

There is no doubt that such teachings represent recognition of the potential in human beings for mobilizing aggressive instincts destructively rather than constructively.

There is everything to make us believe that man's chief fears are not of the immensity of the universe but of the malignity of his aggressive instincts. Freud's skepticism hinges on his lack of conviction that religion could in any realistic way mitigate the sufferings inflicted by the outside world upon the helpless individual. It disregarded the fact that religion may conceivably act as a very real defense against the threat of internal danger (8, p. 190).

To the extent to which religion does this, it serves a useful purpose. We wonder if the manner in which this goal is sought after by conservative groups really enables people to live "fuller, more useful, lives." For example, rather explicit instructions regarding anger have been written by E. Stanley Jones, which represents what we consider to be a conservative attitude. In listing the "Steps out of Resentments," he states:

Remember that resentments have no part nor lot with a Christian. You cannot hold both Christ and resentments. One or the other must go! But whether justified or unjustified, resentments are disastrous to the inner life, they are poison. . . . Decide that resentments are going to have no part nor lot within you (7, p. 106).

One form in which anger is often permitted by this group is righteous indignation. In this form there is a lack of personal retaliation, but the person's anger may be directed at the "evil" practices in the world.

A more liberal attitude towards dealing with anger is expressed by J. Wallace Hamilton (5). He describes the principal ways in which various emotions can be handled. These are self-assertion, self-negation, or self-fulfillment. In the first instance, free rein is given emotions. The second instance implies that certain emotions are totally unacceptable and must be repressed, but in the third instance, the emotions are harnessed and put to constructive use. Hamilton disagrees with those who consider anger to be a sinful feeling, or an indication of inadequate faith, but he does state that anger is an evidence of immaturity in some instances. "You can tell the size of a man by the size of things that make him mad." He decries the

prevalent "moral indignation" towards Communism, immorality, and the like, saying it is much more effective to mobilize our thinking and energies against the causes of evil rather than merely to decry existing results of evil. He feels that the Christian ideal is to be able to channel anger in this manner.

In the light of the above observations, we believe that individuals who have had rather extensive exposure to conservative Christian teachings tend to be more inhibited in the expression of anger. Conversely, persons who most openly express anger are expected to have had less exposure to conservative Christian teachings. We anticipated, therefore, that if the religious backgrounds of a group of people were evaluated, a definite correlation would be found between their religious backgrounds and their present modes of handling anger.

Two studies (2, 10) dealing with somewhat similar problems will be considered later in relation to the findings of the present investigation.

B. PROCEDURE

The subjects selected for this study were a group of psychology students in their freshman and sophomore years in a university in Topeka, Kansas. The first step was to assess the religious background and present beliefs of these students. For this purpose, a questionnaire was formulated which in essence is a combination of the Religious Attitude Inventory of Allport, *et al.* (1) and an unpublished questionnaire compiled by the Board of Christian Education of the Presbyterian Church, U. S. A.² Our questionnaire was constructed to indicate the duration of a person's religious teachings and the quality thereof. Most of the questions were multiple choice. In order to assess childhood religious experience, questions were asked about parental beliefs, religious practices in the home, the number of years and frequency of attendance in Sunday School and Church. Some idea of current beliefs was obtained by asking the students to indicate their present concepts of God, Christ, man, the Church, the Bible, and immortality. The answers were constructed so that three choices were given, ranging from a conservative Protestant to a non-Christian viewpoint. As an example:

Check the statement that most nearly describes you and your parents' beliefs about Christ.

1. As the gospels state, he should be regarded as divine—the human incarnation of God.

2. Christ should be regarded as a great prophet or teacher such as Mohammed.

²Administered to leaders of Westminster Fellowship, the Presbyterian youth organization, at a conference in Grinnell, Iowa, in the summer of 1950.

3. In all probability, Christ never lived at all, but is purely a mythical figure.

These questions were scored on a 0-5 point scale, except for one which required a 0-11 point scale. "Zero" means no religious background and non-christian beliefs. A score of five implies considerable religious background and strongly conservative, Christian beliefs. The questionnaire also included some questions of general interest, the replies to which were non-scorable.

This questionnaire used in 1954, was revised and used again in 1955 with the following additions and modifications:

- a. When the student indicated his beliefs, he was asked also to indicate those of his mother and father individually. This was in order to give additional background information about the student.
- b. The Thurstone Scale on "Attitude Towards the Church" was added.
- c. Personality Inventory: Ten attributes were listed, three of which were aggressive (quick-tempered, domineering, stubborn) and three of which were passive (obedient, even-tempered, submissive). The students were asked to check those that applied to themselves and also those that applied to their parents.

The study, which was in two parts, was administered during class hours, several weeks apart. The professor did not mention that the two parts were related. Even though the entire class was given the tests involved, only the Protestant papers were scored, in order to simplify this initial study.

The second major step in the study was to obtain some indication of the students' way of dealing with anger. The Picture-Frustration (*P-F*) Test of Rosenzweig (9) was used, and was supplemented in 1955 by a few items in the questionnaire as mentioned above. It was felt that the Rosenzweig (*P-F*) Test was particularly suited to our needs since it is a projective test which can be administered to a group.

From the hypothesis, it was anticipated that students with a high background score, indicating long and intensive exposure to religion, would tend towards a large number of total I (intropunitive) and "Super-ego Blocking" I responses, i.e., there would be more reluctance to express anger. The opposite of the above two statements was anticipated for people with little religious exposure.

C. ANALYSIS OF RESULTS

1. First Study

Of the tests administered in 1954, there were 51 complete Protestant records. Twenty-three of these were men's records, and 28 women's. Several

statistical computations were made to determine how the findings compared with what was anticipated from the hypothesis. Four scores were used from the Rosenzweig *P-F* Test, the total and "Super-ego Blocking" extrapunitive (*E*) and intropunitive (*I*) scores. These were compared with the two scores, Religious Background and Present Belief, from the Religious Questionnaire.

The 10 highest and 10 lowest of each of these four *P-F* Test scores were listed and with them the accompanying Religious Questionnaire scores of the students. The differences between the means of the two samples were calculated and analyzed by means of Festinger's *D* statistic. This non-parametric statistic was chosen, as it requires no assumption about normality of the data (4) (see Table 1).

TABLE 1
COMPARISON OF THE SCORES OF THE *P-F* TEST AND RELIGIOUS QUESTIONNAIRE:
1954 STUDY*

	<i>D</i> value for religious background and <i>P-F</i> scores	<i>D</i> value for present beliefs and <i>P-F</i> scores
Total <i>I</i> scores	1.15	Insignificant
"Super-ego Blocking" <i>I</i> scores	2.45	Insignificant
Total <i>E</i> scores	1.95	Insignificant
"Super-ego Blocking" <i>E</i> scores	1.20	Insignificant

**D*, the difference between the means must be 2.6 to be significant at the .05 level.

In the study, six of the eight scores in Table 1 showed results in the direction predicted by the hypothesis. The students with the greatest religious exposure tended to turn less aggression on to the environment (lower *E* scores), and more upon themselves; while those with the least religious exposure showed the opposite responses. Although four scores were in the expected direction, only the relation of "Super-ego Blocking" *I* to Religious Background approximated statistical significance. The data show clearly that there is a much better correlation between *P-F* and Religious Background scores than between *P-F* and Present Beliefs scores. This is not surprising in the light of our present knowledge of the importance of the early years in the formation of the personality.

2. Second Study

Of the group tested in 1955, there were 33 Protestant men's records which could be used. The number of women in the group was too small for effective analysis. The statistical analyses used in the first study could not be applied here since the group from which the extremes were chosen was less than 50. Consequently, in determining the relationship between the

P-F scores and the Religious Questionnaire scores, the correlation coefficient (*r* value) for all males was determined (see Table 2).

The results of the second study bore out the hypothesis better than the first study. Three of the five correlations of *P-F* with Religious Background scores, namely Total *E*, Total *I*, and "Super-ego Blocking" *I*, were significant at the .05 level. Total *M* (impunitive) also gave an *r* value significant at the .05 level, but the hypothesis did not include a prediction relative to the (*M*) responses. The *M* correlations were determined merely to make the study more complete.

TABLE 2
COMPARISONS OF THE SCORES OF THE *P-F* TEST AND RELIGIOUS QUESTIONNAIRE:
1955 STUDY*

<i>P-F</i> score		Religious questionnaire score	<i>r</i>
Total <i>E</i>	and	Religious background	-0.33
"Super-ego Blocking" <i>E</i>	and	Religious background	0.14
Total <i>I</i>	and	Religious background	0.66
"Super-ego Blocking" <i>I</i>	and	Religious background	0.33
Total <i>M</i>	and	Religious background	0.33
Total <i>E</i>	and	Present beliefs	-0.27
Total <i>I</i>	and	Present beliefs	0.16
Total <i>M</i>	and	Present beliefs	0.25

*It is necessary for *r* to be 0.32 or higher for the correlation to be significant at the .05 level.

The negative *r* value, obtained from the correlation between Total *E* and Religious Questionnaire scores, was in accord with the hypothesis, in that we expected the *E* scores to be inversely proportional to the Questionnaire scores.

We also expected to obtain a negative value for "Super-ego Blocking" *E* as well. This did not occur. The correlation of *I* with Questionnaire showed consistently that as anticipated, the higher *I* scores were accompanied by the higher Questionnaire scores.

As in the first study, it is evident that the correlation between *P-F* and Religious Background scores is much better than that between *P-F* and Present Belief scores. The correlations of *E* and of *I* with Present Belief scores in the second study were in the predicted direction, but did not attain significance.

D. DISCUSSION

A study somewhat similar to this investigation was done by Woodward in 1932 (10). Focusing on the factors that may affect an adult's religious life, he attempted to answer the question: "What is the influence of every-

day experience upon the developing of religious beliefs, attitudes, and practices?" In discussing his results, this author "observed that in spite of the emphasis usually placed on the importance of the church school to the individual, the parents' positive religious influence in the home and the extent of church attendance showed practically the same degrees of relationships to the adult religious life." Woodward also noted that parents who are active in doing things with their children tend also to be active in exerting positive religious influence on them such as telling them stories of God's love. On the other hand, parents who scold and punish their children a good deal, tend to use religious threats. These observations seem pertinent to our hypothesis.

In a more recent study Dreger (2) stated several hypotheses, two of which were these: (a) Conservative individuals are more guilt ridden than liberals. (b) Liberals tend to gloss over aggression-provoking situations more than conservatives. His findings did not support either of these statements. Our findings on the other hand did support the first of these hypotheses in that there was a significant correlation between the Religious Questionnaire and Intropunitive (*I*) scores. Persons with the higher Questionnaire scores also had higher *I* scores, implying that they are more guilt ridden.

Dreger used the Impunitive (*M*) scores from the *P-F* Test in testing his second hypothesis. He found no real difference between liberals and conservatives. Our findings here are no more definite as the correlation of *M* and Religious Background scores gave a negative value significant at the .05 level, while the correlation of *M* and Present Belief resulted in a positive value, not attaining significance at the .05 level. The first correlation suggests that with high Religious Background scores, there is a greater tendency to gloss over aggression-provoking situations.

What is the significance of knowing whether or not a person is direct or indirect in expressing anger? Is the tendency to be more extrapunitive less desirable than being intropunitive? Actually either extreme indicates a personality disturbance to some degree. The person who always accepts the responsibility for an unpleasant situation, manifests excessive guilt. For this person, even disguised feelings of anger are forbidden. "Punishment is the 'neutralizer' of guilt" (3, p. 39). Assuming the responsibility for something one is accused of, either invites punishment and humiliation, or closes the issue quickly, so that the risk of arousing further feelings is lessened. On the other hand, being very extrapunitive also indicates a problem. This person may have such a severe and rigid super-ego that he attempts to appease it by feeling that bad situations always arise as the result

of someone else's shortcomings. Thus, his own guilt and responsibility is denied. In contrast to this, extrapunitive may also be seen in the person whose super-ego is so weak and under-developed that he allows himself free expression of anger. Such a person would experience little guilt or remorse about any of his behavior.

Since our study indicates that students who have had a more extensive religious background tend to be more intropunitive, it appears that religious education would be an area for closer collaboration between religion and psychiatry. Such coöperation would help to prevent the development of excessive intropunitive tendencies. Adults need the opportunity to learn practical ways of helping to channel their children's impulses rather than stifling or repressing them.

E. SUMMARY

A pilot study has been described based on the hypothesis that a person with extensive religious training tends to express less anger towards the environment and is more apt to turn it in upon himself. The findings in this study not only bear out the basic hypothesis, but also show that a person's present religious beliefs have a much less definite correlation with modes of handling anger. These findings are relevant to Religious Education for two major reasons. First, if stress is placed only on the sinfulness of anger, difficulties are created in the personality development of the child which may be serious. Second, if it is desired that religious precepts have a positive and integral part of personality formation, the early years are most important, for later teachings can at best, only modify the patterns already formed.

In this investigation, group tests were used to obtain the information from the subjects. The study in 1954 indicated some gaps in the Questionnaire, and these were rectified in 1955. It would have been helpful to have been able to arrange for interviews with the students to further verify the impressions obtained from the Questionnaires. Nevertheless, it still appears that the Religious Questionnaire is a useful tool for obtaining information about the religious backgrounds and present beliefs of a large number of subjects. It could be used as a means of screening a group for people with religious conflicts, or when given to psychiatric patients, it would provide a better picture of the rôle of religion in their lives. Moreover, combining the Religious Questionnaire and a projective psychological test is a useful means of investigating the complex relationships existing between religious influence, family atmosphere, and personality development. This type of study helps to define more clearly the rôle which religion can play in preventive psychiatry.

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SHORT ARTICLES AND NOTES

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HOW DO SOCIAL SCIENTISTS DEFINE RELIGION?*

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A. PROBLEM AND PROCEDURE

Pursuant to a request by the Society for the Scientific Study of Religion at a recent meeting, in order to study definitions of the term "religion" among its members, a questionnaire was circulated asking two questions, as follows: (a) What do you study when you study religion? In other words, how do you define religion? (b) What propositions or values do you find most basic in your personal life experience? That is, in what do you invest your energies: on what do you "bet your life?"

What follows immediately is an analysis of 68 replies received with respect to the first question, which was an attempt to discover the extent of agreement or disagreement about the term among social scientists and other scholars interested in studying religion by social scientific methods. The 68 comprised 23 psychologists or psychiatrists, 21 ministers or religious scholars, 13 sociologists, social workers or anthropologists, 12 philosophers, natural scientists and others.

There did not seem to be any particular pattern of replies distinguishing any one of these groups, with one exception that will be noted below. Consequently, the group will be analyzed as a whole. Since the questionnaire was completely open-ended, analysis was quite difficult. Categorization was very rough, and there is no pretense that the sampling represents a scientific cross-section scientifically analyzed. It simply gives some idea of the variety of definitions proposed among those who might suppose that they are studying the same thing and suggests difficulties that arise at the outset of any attempted "scientific" study of religion.

Preconceived categories for the definitions were discarded at the start, the categories being suggested by the replies themselves as the analysis was carried forward. Similar ideas were tallied together, some definitions suggesting only one idea, while some suggested several. Consequently, total tallies exceed the number of definitions. Similar ideas were then combined in groups, with total tallies for each, in Table 1.

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TABLE 1

1. Concepts of the supernatural, spiritual, or non-material	29
2. Concepts regarding ultimates or The Ultimate	25
3. Definitions involving group concepts	21
4. Concepts concerning the institutional and creedal	15
5. Concepts emphasizing theology	15
6. Concepts of interaction between the inner and outer aspects of life	4
7. Indeterminate	1

B. RESULTS

1. *Concepts of the Supernatural, Spiritual or Non-Material*

Together with suggestions of loyalty to or relationship with such transcendental realities. These ideas included of course those definitions that used the term God and two that suggested mystical experience as an important factor in religion. This was the largest category.

A representative of this type of definition, given by a psychologist follows: "Religion is the inner experience of the individual when he senses a Beyond, particularly as evidenced by his behavior as he tries to harmonize his life with the Beyond."

2. *Concepts Regarding Ultimates or The Ultimate*

It will be seen that this type of idea occurred nearly as often as the preceding. Included here were replies that suggested religion as man's response to the major problems of life and the meaning of life, as well as those suggesting that whatever man considered most important in life involved his religion. A common characteristic of this category was that religion was defined in such a way as to be inherent in nearly everyone's life, whereas in Group 1 religion was conceived as something more specialized and particular. Group 2 represents the broadest of the categories. As clear and typical as any in this category was the following from a professor of philosophy, education and religion: "I define religion as 'comprehensive life-orientation' or (following Tillich) as 'ultimate concern.'"

Another definition less obviously classed here comes from a research professor and social philosopher. This definition is more operational but the idea of ultimates is clearly suggested by the defining of religion in terms of what people will do in extremities: "The ideas, images and performances that people affirm and act on and out, in their quest for safety and certainty beyond the customary operative insurance against the commoner hazards of their lives. *How* and *what* people turn to in crises."

3. *Definitions Involving Group Concepts*

This category comprised ideas of the group in two quite different senses, about equally represented. First were those that specifically mentioned society and group values, usually identifying them as the highest social values. Such a definition given by an anthropologist follows, though the definition also contains a mixture of an idea to be noted farther on: "Religion consists of those values shared by a group of people which are also their most intensely held values. Since such values must be studied by way of their derivative symbolism and ritual, these aspects become in practice part of religion."

The other type of definition here listed assumed some kind of group concern through concepts of ethics, morality, love, or similar ideas. The two following definitions were as pure examples of this type of idea as were presented, the first from a psychologist, the second from a retired professor of education: "To me religion is the expression of the 'ought' in man, an inner feeling and compulsion which makes for consistency and order in behavior. Religion supplies the missing link in psychology." (Religion consists of) "those relationships of man in which good-will is the chief motivating force."

4. *Ideas Concerning the Institutional and Creedal*

These definitions were those that tended to identify religion with the church and tradition. While obviously not coming from priests in most cases, these definitions were those that would tend to be approved by those with a priestly turn of mind. Along with ideas of institutional membership they included definitions that emphasized symbolism, ritual, and other such external aspects of the religious life. In most cases these had the social-scientific virtue of defining the observable. However, none of the definitions defined religion exclusively in this way. The following shows these ideas rather prominently along with several previously described. The writer is a sociologist. "Religion is the relationship between God and man, and the manner in which man manifests this relationship. In an organized sense, it is a body of beliefs and patterns of behavior. Thus we have four aspects of religion: (a) the creed which expresses our meanings; (b) the code of conduct as contained in our moral behavior; (c) the manner in which we worship God; (d) the union with others who are His children."

5. *Ideas Emphasizing Theology*

Like Group 4 these ideas seldom occurred alone but in combination with others. The following, from a Lutheran clergyman, was the clearest example of this group:

Religion is the discipline that sets forth truths concerning God. It sets forth His attributes and His relationships to the Universe. It concerns itself with man's needs, his moral condition, and his place in the world. Then it also deals with man's relationship to God and his moral responsibility in the light of that relationship. The Christian religion does this in the light of the revelation we have in the Old and New Testaments, and particularly in the presence of Jesus Christ Who is God.

6. *Ideas of Interaction between the Inner and Outer Aspects of Life*

While all other groups were pretty well distributed among different types of disciplines interested in the scientific study of religion, this was an exception, in that all four definitions emphasizing the idea were psychologists. This might be expected. The following comes from a clinical psychologist and speech pathologist: "I feel that religion must be in terms of the person's self-concept and his perception of his rôle in the environment. It is the way in which these two factors interact and the way the person handles this interaction I feel constitutes the area of study of religion."

C. CONCLUSIONS

The results of this aspect of the study might have been predicted in advance. Certainly it needed no ghost to come from the grave to tell us that social scientists would differ in their definitions of religion. Yet it is wholesome to have the situation spelled out. What then are the conclusions of the whole matter?

1. Social scientists may mean very different things by the term "religion." Contrast religion as ritual with religion as interaction between man and his environment; or religion as an experience of the supernatural with religion as whatever meaning a person might find in his life. This leads to our next conclusion as a kind of corollary.

2. Religion has many facets. To anyone who has reflected much on the comprehensive nature of religion, this can come as no surprise.

3. Since a single social scientist may include several ideas in his definition of religion, we may suspect that there is a temptation to use it in one sense at one time and in a different sense at another. The definitions we have cited as illustrations were the simplest and clearest that we could find in our samples. Even these, however, often contain several ideas. Others were even longer and more complex with the ideas sometimes well integrated and sometimes more loose. The more complicated the definition, the more difficult, we would expect, for all aspects of it to be kept clearly in mind.

4. It is important that social scientists studying religion make explicit what they consider they are studying. It does not follow that in doing so they are giving their final judgment on what religion is, nor are they limiting it. They are simply limiting it for the sake of clarity and for the purpose of their own particular project. Some such procedure is essential if the scientific study of religion is to get off the ground as an academic discipline.

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THE COÖPERATIVE SCHOOL AND COLLEGE ABILITY TEST AS A SCREENING INSTRUMENT FOR THE MATHE- MATICS PROFICIENCY EXAMINATION*

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The various college administrators were discovering that more and more of the time allotted to the freshman orientation program was being consumed by testing. It was true that the increasing enrollment created a demand for more definite and detailed objective information about each new student; but the number of tests being administered was threatening to become excessive. For this reason, an effort was made to determine if there was sufficient overlapping in the testing program to permit the elimination of one or more tests without lessening the over-all efficiency of the program.

For some years, Part IV-Mathematics, of the *Coöperative General Culture Test* had been used as a preliminary screening instrument in conjunction with high school transcripts to ascertain which freshmen would be admitted to the mathematics proficiency examination. The results of this proficiency examination then determined which students would be excused from Mathematics I. The results of this plan had been satisfactory.

The *Coöperative General Culture Test* was designed as a measure of general achievement in five areas of the curriculum: social studies, literature, science, mathematics, and fine arts. The section of the test on mathematics consists of 60 items covering arithmetic, algebra, geometry, solid geometry, and trigonometry. Emphasis has been placed on the understanding of basic concepts and the application of this understanding in the solution of specific problems (1).

In September, 1955, the *Coöperative College Ability Test (SCAT)* superseded the *American Council on Education Psychological Examination* in the freshman orientation program. This examination has been designed for the purpose of helping teachers and counselors to estimate the capacity of each individual student. The test is a measure of developed ability, indicative of the relative academic success the student is likely to achieve in undertaking work of a higher level. The first and third sections measure ability in skills that are closely related to student success in verbal kinds of school learning; the

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second and fourth sections are measures of ability in certain quantitative skills of number manipulation and problem solving. These sections measuring mathematical skills consist of 50 items (2).

Since this new test was presented as a measure of ability already developed, there seemed to be a possibility that it might serve the screening purpose formerly served by Part IV of the *Coöperative General Culture Test*. That possibility prompted this study.

For the administration of the *Coöperative College Ability Test*, the freshman class was divided into sections of 51 or 52 students each. The test was administered to each section by the head of the psychology department, with a major student acting as proctor. The scoring of the tests was done by advanced students under the supervision of the psychology professor. All answer sheets were scored twice, and all scores were checked. Part IV Mathematics of the *Coöperative General Culture Test Form A* was administered to each section of freshmen by a member of the faculty assisted by a proctor. Scoring and checking were done by a senior mathematics major with student assistants.

In order to determine if the Quantitative Scores of the *Coöperative College Ability Test* could be used as a screening instrument for mathematics as satisfactorily as the *General Culture* Part IV scores, the two sets of results were correlated. In order to do this, it was necessary to convert the raw scores of the *Coöperative General Culture Test* into standard scores. The mean and standard deviation of the raw scores were calculated to be 12.88 and 5.54 respectively. Each raw score was then converted into a Z-score by means of the formula:

$$Z = \frac{x - \bar{x}}{s_x} \cdot \left(Z = \frac{4 - 12.88}{5.54} = \frac{-8.88}{5.54} = -1.6 \right)$$

These Z-scores were then used to obtain T-scores by means of the formula:

$$T = 10z + 50. \quad (T = 10(-1.6) + 50 = -16 + 50 = 34)$$

Standard scores for the *Coöperative College Ability Test* were obtained from tables provided with the test.

When standard scores had been obtained for both sets of data, a table of correlation was constructed and the values of both sets of scores were coded according to the following formulas:

$$\text{Coöperative College Ability Test—}u = x - 290.$$

$$\text{Coöperative General Culture Test—}v = y - 50.$$

The coefficient of correlation, r , was then obtained from the following formula:

$$r = \frac{N \sum uv - \sum u \sum v}{\sqrt{N \sum u^2 - (\sum u)^2} \sqrt{N \sum v^2 - (\sum v)^2}}$$

The resulting value of 0.91 for the coefficient of correlation indicates that both tests are practically equal as measures of mathematical ability. The Quantitative Scores of the *Coöperative College Ability Test* could therefore be substituted satisfactorily for the Part IV-Mathematics of the *Coöperative General Culture Test* as a screening instrument for the proficiency examination in mathematics in the freshman orientation program, thus eliminating the administration and scoring of one examination.

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BOOKS

Now that there is a special *APA* journal completely devoted to the publication of book reviews, it is no longer necessary that other journals emphasize such publication. It has always been our conviction that book reviews are a secondary order of publication unless they carry information that is equally important as the book. However, the publication of book titles is a very important service, and we shall continue to render that service.

In any given issue of this journal, we may continue to publish one or more book reviews, but we do not consider such publication a major function of this journal. In line with this policy, we can no longer pay for such manuscripts.

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PREFACE II TO THE CONTINUED IMMEDIATE PUBLICATION OF CROSS-CULTURAL RESEARCH

Editorial Office, Journal of Social Psychology

CARL MURCHISON

One year has passed since the Editor wrote his first "Preface" to the publication of cross-cultural research (1). After several months of occasional papers in response to our general invitation, suddenly we have this glittering collection from many parts of the world where such work is being done.

Approximately half of these papers were delivered before the XVth International Congress in Brussels, while the remainder of the papers were sent directly to the Editor. Some of the papers were written in French, translated into English, and then retranslated once more. Much of the original data was omitted for presentation to the Congress, but may be obtained from the authors.

With the single exception of Elizabethville, the Editor has visited all the localities from which these manuscripts have come. The variety of method and of subject-matter are so great, that the Editor has been bemused to observe at least faintly some of the emerging criteria of all great handbooks.

Please let me quote some of the general statements in the letter of December 13 from Dr. Biesheuvel:

The papers are uneven in scientific merit and competence, as might be expected in view of the differences in status and experience of the contributors. Some contribute little that is new, and some suffer from inexperience in the presentation of scientific material and lack of clarity in argument. Some, though extremely interesting, are descriptive and devoid of theoretical analysis.

My submission of the whole batch should therefore not be interpreted as a recommendation that they should all be published. You may, however, find it possible to publish all because they present an interesting cross-section of the psychological work going on in Africa and cover pretty well all its aspects, methodologically and in content. In any case, some are extremely excellent.

We hope to see you in Africa again one of these days. Events are moving fast here, far too fast when one considers the mass of the African people living in conditions which are utterly alien to the ways

of the West and whose progress, one fears, can only be gravely hampered by changing their colonial mentors for their own leaders. What concerns us here is whether the pressure from the North, with all the moral, if not practical, backing from the East, will eventually render our position here precarious. Politics are undoubtedly no help in our attempt to meet this situation in a realistic and ethical manner.

So speaks this remarkable man from out of Africa.

From a different kind of world, we quote the following statements in a letter from Dr. Rath when he sent his manuscripts from Cuttack, India, on December 9, 1957:

It is very gratifying to read your "Preface to the publication of cross-cultural research" in the May issue of the *Journal of Social Psychology*. I am sure this will encourage the foreign research scholars engaged in social research programmes. In India we are working under tremendous handicaps both in the process of investigation and publication of results. Your kind offer to publish such papers without much delay will surely stimulate the scholars in this country.

I have been doing this kind of social research for the last five years or so. Besides my personal investigation in this field I am now in charge of a research project financed by the Federal Government on Social Tension based on inter-caste relationship. We have done quite a bit of work in this field and we hope to finish the work in the middle of 1958.

The attitude and stereotype study will be carried on over many years to observe systematically the change and development, appearance and disappearance of variance attitudes and prejudices towards the various internal and external groups. To me this kind of study appears to be quite fruitful in the present day world.

When I was in the States four months back I contacted many psychologists doing similar work in your country. Dr. Cantril of Princeton and myself have planned a joint research project on national aspiration.

And so speaks a voice from India.

It will be found rewarding to compare the two papers by Rath and Das with the paper by Zaidi and Ahmed. The reward presupposes some knowledge of the political events of those areas.

Just a brief background quotation from Dr. Lee's letter of February 26, 1958:

With occasional field trips interspersed, I have lectured in Psychology at the University of Natal, the University College of Fort Hare, and Birkbeck and Bedford Colleges of the University of London over the last nine years. I grew up in Zululand.

The sophisticated paper by Dr. Taft, in extreme contrast with the just-born babies of Uganda, contributes a highlight to the artistic form that may reside in these papers most of which have been wrested from areas where life is hard.

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OBJECTIVES AND METHODS OF AFRICAN PSYCHOLOGICAL RESEARCH*

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S. BIESHEUVEL

The adequacy of the methods used by the research worker in the psychological study of the indigenous black population of Africa can be judged by three criteria: (a) their appropriateness to the objectives he intends to pursue; (b) the soundness of the assumptions implicit in his formulation of research problems; (c) the effectiveness of the techniques by means of which he tries to obtain his data. This paper will confine itself to a discussion of methodology in relation to the first two.

The primary purpose of African psychological research is to gain an understanding of the behaviour of African peoples. Psychology owes a considerable debt to social anthropology for its elucidation of the social systems and functions that govern African community life. Its own emphasis is placed on the habits, pursuits, motives, ideas, and values of the individual members of these communities. It tries to throw further light on the way in which African institutions both arise from and regulate human needs. It analyses the personality structures that result from their causes. Psychological research directed towards these ends should be social in its orientation, closely related to the work of social anthropologists, and preferably be conducted on a team basis. Field work, interviews, and group discussions are the common basis of the research approach of the two sciences, but whereas social anthropology leans more heavily on longitudinal observation, psychology makes greater use of tests and other devices that facilitate quantitative analysis.

The second objective of research into the psychology of African peoples is of a more systematic and theoretical kind. It is to provide a means of testing the general validity of psychological hypotheses concerning human behaviour. Western culture, within which scientific psychology originated, has inevitably served as the frame of reference for the formulation of these hypotheses. As a result, psychological laws may lack universality. For ex-

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ample, are human abilities uniquely defined by such factors as Spearman's *g*, or Thurstone's primaries, or are these concepts merely artifacts of the kind of intellectual functions fostered by Western culture? Are the dynamics of volitional behaviour those postulated by psycho-analysis, or do comparative studies show that this kind of development is only found in societies that have the family structure and moral codes indigenous to the West?

Such studies can be of the utmost theoretical significance to psychology as a science and may well involve a re-formulation of its concepts, particularly those concerning thought, motivation, personality, and character. The research worker who intends to enter the African field should carefully examine the assumptions in his experimental plan and analytic framework. If possible he should test them by means of comparative studies, by reference to social history, and to the results of social anthropological and sociological studies. An awareness of the relativity of psychological concepts and laws as now formulated will incline him to be cautious in his statements concerning the nature of behavioural differences between distinct ethnic groups. In apparently unique features of African behaviour, at first seen as intrinsic to African cultures or races, there may be detected parallels with the behaviour of other groups at some time or other in their history, which constitute general human responses to environmental circumstances.

Another and more practical purpose in the study of African behaviour is to determine the extent to which it is modifiable. Two distinct objectives are involved, namely: (*a*) to find which of the many possible environmental factors can exercise a significant effect on the development of psychological attributes; (*b*) to find the order of magnitude of these effects. These objectives should be treated as separate because a much simpler research design can be used to establish the relevance of a factor than to determine what proportion of the total environmental variance it can contribute. So many possible influences have to be considered that a narrowing of the field for detailed investigation is desirable. Much time and effort can also be saved, when investigating the effects of one environmental variable, if one knows which of the others can be neglected and which need to be controlled.

It is surprising that whilst so many social scientists have asserted with so much confidence that the psychological differences between ethnic groups are entirely environmental in origin, so little experimental evidence is in fact available concerning these environmental causes (2). The reason for this neglect is partly to be found in the lack of suitable opportunities for this kind of research in Western environment, but mainly to a preoccupation on the part of research workers in Africa and other underdeveloped areas

with interracial comparative studies, in which they have tried to hold constant (or more often have ignored) the very environmental variables that should have been the primary object of their research.

This applies in particular to the effects of tropical diseases, continuous high temperature and humidity, lack of seasonal variations, and chronic malnutrition caused by diets peculiar to certain geographic areas. It also applies to practices which either do not obtain at all in Western culture (such as polygyny) or which are atypical in our modern society and therefore associated with other conditions which may cut across their effects. A case in point are certain traumatic weaning practices, accompanied by attitudinal changes on the part of the mother towards the child which virtually amount to rejection. In Western communities this occurs only in backward groups, or in families where the relation between mother and child is seriously disturbed. In many African societies such practices, including the separation of mother and child when the next baby is due, are traditional and their effects a normal element in personality development.

Another unique source of cultural environmental variation which is in need of more intensive study is that which derives from the contact between Western civilisation and African cultures. Comparative studies between areas where this process has run a particular course should disclose what is most readily assimilated, what is most strongly resisted, what strains are imposed on personalities in transition from one culture to another and to what extent previously existing behavioural differences tend to persist.

Research into the limits of modifiability of African behaviour is predominantly intracultural, unlike that which aims at the establishment of universal psychological concepts, or that which attempts to determine the origins of differences between ethnic groups. It is cross-cultural only in so far as comparisons are concerned between African cultures with somewhat different characteristics, or which are in different stages of transition towards Western civilisation. Such comparisons increase the range of environmental variation and are meaningful provided a sufficient number of features characteristic of African cultures and geographic environments are common.

Control problems are relatively straightforward in intracultural studies of this kind, as the many subtle cultural influences that can cut across the operation of any environmental variable are present in both experimental and control groups. A methodological point of some importance is to allow for possible interaction between the experimental and controlled variables. The problem is well illustrated by a study concerning the effect of bilharzia on the mental effectiveness of African children. Communities can be found

in Southern Africa where within the same tribal and geographical area, this parasitic disease is rife in some villages situated on the banks of streams, whilst others, drawing their water from wells, are virtually free from infestation. As cultural interests and activities, habits, beliefs, daily pursuits, skills, educational facilities and practices are the same in both free and infested communities, experimental and control groups can be matched with ease. One can nevertheless not ignore the possibility that controlled elements, as part of the total situation in which the variable to be investigated occurs, may cut across its effects. Thus any difference or lack of difference in intellectual efficiency between the two groups should not be interpreted as a measure of the effect which bilharzia can exercise as such, but rather of the effect exercised by the disease in interaction with the particular environmental circumstances, such as malnutrition and limited intellectual stimulation, with which it happened to be associated in the experimental group. The result would be of practical value as an indication of the improvement in test performance, and presumably also in actual behaviour, that could be expected in the area concerned from bilharzia therapy and prophylaxis alone. But it would be misleading if interpreted as a measurement of the total effect that bilharzia could exercise under any circumstances. Its effects may show up very differently in an active, well-fed, educationally stimulated group than in a malnourished, apathetic, backward population. Experimental designs must therefore take such possible interaction effects into account.

Learning experiments are likely to provide essential evidence on the limits of modifiability of behaviour in African communities. If conducted cross-sectionally at particular age-levels, the results cannot form a basis for generalisation unless representative groups are examined at successive age levels, which raises many problems of sampling and control. The maturation factor is all-important in learning tasks and it is by no means unlikely that when the optimum period for the development of certain basic abilities has passed, the acquisition, at a later stage, of skills in which these abilities are involved, may progress more slowly and cease at a lower level of proficiency.

If such features of African life as adverse climate, malnutrition, tropical diseases, the limited mental stimulation provided by tribal life, and the stresses imposed by contact with Western civilisation have an effect, this is likely to be exercised in a very gradual and pervasive manner. We also lack knowledge concerning the psychological effects of practices, events, institutions, and personal relations that enter into the social learning process in African societies. Because of the absence of records, the precise life history is diffi-

cult to obtain in retrospect. Even in the urban areas of the Union of South Africa, as elementary a fact as date of birth is generally not available, unless the case happened to be born at a maternity clinic and could be traced back to this source. Under such circumstances, the importance of taking the record of life as it unfolds itself is obvious. Learning had therefore better be studied longitudinally, in order that what the individual experienced and was capable of at one stage can be related to his behaviour at later stages.

One envisages a number of intracultural developmental projects in which the significance or potency of one or more environmental factors would be studied with reference to some behavioural function, such as motor co-ordination, visual perception, abstract reasoning, or self-assertion. Choice of factors and period of observation would vary according to the nature of the function to be investigated. By eliminating in successive projects variables found to be insignificant in their effects, and by including others hitherto controlled or ignored, a reasonable estimate of the limits of modifiability of psychological functions should eventually be obtained.

A study of the effects of nutrition and of certain cultural circumstances on the physical and mental development of Africans, which is at present in progress in South Africa, provides a complex example of this approach. The principal variables entering into the experimental design are the mother's diet during pregnancy and the nursing period; the child's diet before and after weaning; their physiological utilisation of these diets; childhood illnesses; parental and sibling intelligence; level of education of members of the family; parent-child relations; the family's socio-economic status and the material comforts of the home; length of period of residence in urban areas and degree of acculturation to Western ways of life. Controlled variables with which interaction must nevertheless be investigated in subsequent studies are tribal origin and the general cultural background of a particular form of African urban life. To simplify the present investigation, cases were selected from the Zulu population in an African township built and managed by the Johannesburg City Council. Other controlled factors are the attitude that cause the mother to seek the help of a maternity clinic (all cases are drawn from its outpatients department); and normality of pregnancy and parturition. The psychological functions, of which the course of development and range of variation are being measured are those motor, perceptual, associative, reasoning, and social responses that are generally included in developmental schedules and pre-school ability tests.

Preparatory studies to find the most suitable area, to explore the prob-

lems of dietary and sociological surveys and to establish developmental schedules have already absorbed $2\frac{1}{2}$ years. The longitudinal study proper will take another seven.

There remains one further question to be discussed. If the distributions of individual differences in the behaviour of African and other ethnic groups were found to be dissimilar, could genetic origins be postulated for the observed discrepancies? The genetic variables involved in psychological attributes are mainly hypothetical at this stage, and their experimental verification has proved an extremely difficult matter. The most thoroughgoing research has been carried out in the intellectual domain, where, by manipulation of environmental factors, a residual proportion of the range of individual differences has been found which has been attributed to genetic causes. Controversial though this work has been, its assumptions of complete environmental control or of elimination of all environmental variance were plausible when applied to the differences between individuals reared within the same culture. There was, moreover, the possibility of a check by determining the limits of differentiation that could be brought about by subjecting identical twins to widely divergent environmental conditions (4, 9).

If, on the strength of these studies, we accept the genetic origin of part of the range of individual differences within a culture, then we must also consider the possibility of such an origin for some of the differences between ethnic groups, as there is no evidence that the genetic determinants of psychological attributes cannot be differentially distributed in different races. Cross-cultural studies of the conventional type, in which differences between matched groups are measured at some cross-section of time, can provide no valid support for this hypothesis, as it is quite impossible to equate all environmental influences in this manner or to match equally representative population samples (1, 2, 3, 5). The method of determining limits of modifiability intraculturally by means of longitudinal studies is sounder, but there could still be no certainty that the differences obtained in this way would be residual and therefore genetic. Whereas the differences between individuals in one culture could in fact be made residual in relation to the full range of environmental influences presented by that culture, the differences between groups cannot, because the range and quality of environmental differences are specific to each culture.

There are, to be sure, many common elements that can be varied within each culture in a near-identical manner (such as nutrition and education) but there are other features that are unique to and non-variable within a culture (such as climate or kinship systems). There may even be subtler

influences at work, pertaining to the values, the internal tensions, the cosmology of a culture which, as a field within which all other variations take place, could affect the outcome of any experimental manipulation. As the limits of modifiability would therefore be set with reference to non-comparable environmental circumstances, the difference between these limits could not be looked upon as residual. Hence the attempt to isolate a genetic component in the behavioural differences between two ethnic groups cannot succeed by this means. In the present state of our methodological knowledge, the gradual development of a common culture would be the only reasonable alternative, and this is an unlikely occurrence, if for no other reason than those of climate, geographical features, and the persistent effects of historical circumstances.

To questions concerning the genetic components in the behavioural differences between races, no scientific answer can therefore be given. It will not be useful to include at this stage, the formulation of such questions in African research programmes.

Some incidental light may be thrown on the problem by means of developmental studies on newly born infants. Differences in psychomotor development during the first year of life have already been observed, although cultural effects could not be excluded even at this level (6). This may, however, be possible in the case of babies reared in an institution, and on which facts are also available concerning pre-natal history. There remains the difficulty of sampling and of predicting ultimate adult development from growth rates in the first years of life.

Also feasible are experiments on some physiological function, known to be related to behaviour, such as the electroencephalogram (7). The snags here are firstly that the physiological functions themselves may be subject to environmental influence (it appears that the E.E.G. can be conditioned) and that there are very few, if any functions where physiological and psychological measurements can be directly related.

African research programmes should therefore be preferably directed towards the measurement of limits of modifiability of African behaviour, and towards a definition of the environmental factors that determine these limits. Such research does not aim at ultimate theoretical limits, obtainable only, if at all, by means of artificial laboratory experiments without relevance to African social development. It has the more realistic objective of finding out what can be achieved by means of measures that are practicable now, or that will be so in the future. As such, it is socially valuable, providing a means whereby African potentialities can be more fully realised and whereby group differences in well-being can be reduced.

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METHODOLOGY IN THE STUDY OF ATTITUDES OF AFRICANS*

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S. BIESHEUVEL

A. INTRODUCTION

An attitude is a motivational mental set, functioning at the level of interests, preferences, wants, values, and beliefs, rather than at the level of direct satisfaction of primary drives. Attitudes throw light not only on the individual's behaviour towards important aspects of social life—family, class, occupational and racial relations, political and religious institutions—but also on some of the mainsprings of his personality.

They are generally measured in verbal form, partly because they are more manifest and explicit as such, but mainly because the overt behaviour arising from an attitude—relations with supervisors at work, support of a political party, religious practices, applications of ethical principles to real-life situations—does not lend itself readily either to observation or to measurement. Critical incidents that might serve as a basis for such observation occur infrequently and haphazardly and cannot be experimentally induced. Direct appraisal of interpersonal relations can only be made by persons who are a party to it and who are therefore subjectively involved. Assessments by third parties generally rely on some form of report with unknown subjective bias; when such reports are observational, there is no certainty that the presence of the observer has not altered the overt behaviour concerned. Behaviour which concerns moral standards or statutory requirements cannot be adequately observed, either in the act or in its consequences, because infringements occur in a manner which frequently prevents detection. Job attitudes, of considerable importance to the personnel manager as determinants of industrial efficiency, are perhaps more easily validated, in that they should have some relationship with the actual movement of labour into and out of an industry, with absenteeism, and with the objectively determinable characteristics of industries, or of the populations employed in them. Finally, many attitudes—on such matters as capital punishment, divorce, alcoholism—express themselves in action in such a remote and indirect manner (such as

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voting for a particular party, membership of a society, donations to charitable causes, choice of friends) as to be virtually unverifiable. Except in the case of champions of a cause and their disciples, these attitudes exist only at the level of opinion, an opinion moreover which may be largely academic if the topic is remote from the life experiences of the person expressing it.

The validation of attitude scale data therefore presents a methodological problem of some importance, for psychology should not content itself merely with the measurement of verbalised behaviour, however revealing this may be of personality structure and group stereotypes. The prediction of behaviour in particular social situations must be the ultimate objective.

The measurement of African attitudes is particularly important, as we know comparatively little about the extent to which African communities in various parts of the continent have adjusted to, or identified themselves with Western civilisation, its customs, values and institutions. One cannot hope to gauge the motivation of Africans towards education, towards the economic or social aspects of work, and in their relations to their fellow men, without such knowledge.

The problem of ensuring that verbalised attitudes will throw light on behaviour in real-life situations is aggravated in African studies by the difficulty of obtaining genuine responses. A host of cultural circumstances may interpose themselves between the questioner and his subject. The direct, concrete, question and answer approach may not commend itself to certain African cultures, which may prefer communication by way of allegory or fable, understood only by those who have an intimate knowledge of a culture. Politeness towards strangers may prescribe certain ceremonial responses, or at least the avoidance of anything that, by the standards of local custom, could offend. It might be considered bad form to touch on certain subjects at all. For example, in an experiment in public opinion polling among the Cewa in Northern Rhodesia, Marwick (5) found, after working in the area prior to his survey, "(a) that the Cewa conceive of the ordinary function of question and answer as being the expression of mutual interest and goodwill, rather than the obtaining of information; (b) that it is politer when interviewing to sit down than to remain standing; (c) that the Cewa are more punctilious than other Nyanga speakers about using the honorific plural in respectful address and reference; and (d) that it would be downright rude to record an informant's response without some exclamation showing interest or surprise." When the questioner belongs to a dominant group, which practises social and political discrimination and to which Africans are expected to defer, responses are likely to be influenced by inhibitions lest one

offend against traditional relations, by fear of being victimised for criticising the established order, by the desire to please and to give the approved answer, or by attempts to air a grievance or to slant responses towards some desired end. Only the disturbing effects of differences in communication habits are unique to the African context; the other causes of error in obtaining genuine verbal responses can occur in any attitude study, especially in work situations, where dominance-subordination relations also obtrude; but they are more difficult to guard against and to overcome in the study of African groups. Knowledge of tribal culture and of local social conditions is essential. The correct moment for conducting the study must be carefully gauged. The method must be adjusted to the circumstances, which may mean that less consideration should be given to technical refinements and scaling requirements than to an approach which facilitates rapport. The design of the investigation should be such that some check on extraneous disturbing influences is possible. The use of African field workers is desirable; men and women sufficiently detached by virtue of their scientific training not to identify themselves emotionally with their informants, nor so remote from the latter's way of thinking to find it difficult to establish rapport. Their selection and training presents a considerable problem, which has been successfully overcome in the case of a number of African graduates employed by the National Institute for Personnel Research in the Union of South Africa. Responses are usually less evasive and less designed to please when elicited by African field workers, even when it is appreciated, as it generally is, that they are acting under white direction. This handicap to sound rapport can be mitigated by avoiding sponsorship by local administrators. Formal permission must generally be sought, and the field worker must pay his respects when arriving in an area; but thereafter he should avoid having his path smoothed for him by local authorities and should make his own way, more laboriously but more surely. This is difficult when working in industries, where sponsorship by management can hardly be avoided, but where on the other hand, the white-black dichotomy may have become relatively less important than that of the employer-employee.

B. THE COMBINED INTERVIEW AND GROUP DISCUSSION METHOD

The interview and group discussion techniques have been found particularly useful for the assessment of attitudes of African subjects who have received little or no education. In the use of these techniques, pilot studies are desirable to determine the range of responses that may be expected to certain questions, to discover what particular "slants" may be operative in

the situation and whether ulterior purposes behind the answers need to be circumvented. The "slants" may of course in themselves be important to the questioner as factors influencing the development of attitudes. Thus in a study of attitudes towards western customs, legal and moral requirements carried out in a rural tribal area by the writer, the rationalistic, ethical, "acceptable" answer from a civic point of view was given far less frequently to questions concerning the farmer's duty to improve his stock, to irrigate his lands and to plough along the contour than to questions that had to do with interpersonal relations, or the correct behaviour when one went to an urban area, or worked on a European farm. Discussion constantly veered towards government regulations, recent proclamations, suspicions about the motives of authority. It turned out that a pedigree bull had been presented to the reserve, to be kept near the Chief's village, a piece of land being fenced to pasture the bull and conditions being laid down for dipping and general care of the animal. Suspicions concerning the culling of stock, the alienation of land, restriction of common grazing and the like, immediately arose, and it became evident that the attitude enquiry was seized upon as a likely channel through which objections could be voiced and possibly brought to the attention of the right quarter. The "slant" of the answers was to deal with certain local grievances, rather than to consider the questions that were put on their merits. This "slant" also affected responses to topics with only a distant connection with the principal cause of grievance, the questions being turned in such a way that the main theme could be emphasised and supported. Only topics which no amount of sophistry could associate with the "leit-motiv" escaped this tendency. Incidentally, much was learnt about some of the factors which in a rural and fairly primitive community determine the development of attitudes.

On the completion of a pilot study, a schedule of items is prepared to form the basis of questioning. The African graduates who conduct the interviews or who lead the group discussions have complete discretion in choosing the order in which they put items, according to the trend of the discussion and according to what appears to them to be the most useful opening contact point, though the interview always covers the entire field laid down in the schedule. The interview questions are generally "open ended," but workers who have lived for some time in a western industrial environment also respond satisfactorily to questions in which they have to rate their endorsement of alternative responses on a three-point scale, or to rank alternatives in order of preference. The group discussion, which always follows on the interview, is conducted informally by the interviewer with groups

of five to eight informants. At this discussion, matters are raised which could be delicate if handled on an individual basis—such as marital relations and kinship obligations—and which lend themselves better to impersonal discussion. This also applies to topics which have to do with group relations and matters on which decisions would normally be taken collectively by gatherings of tribesmen. On occasion, groups may be permitted to discuss at random any question relating to the work situation that interests them. Finally, the group discussion is used to exploit important leads or to reconcile conflicting opinions that have emerged from the interviews. Africans always respond favourably to group discussions, because they enjoy informal social talking and because collective discussion is the traditional way of settling matters of public moment.

When the interview and group discussion method is used to assess occupational attitudes, it has been found useful to check attitudes based on alleged happenings against facts wherever possible. Thus statements concerning conditions of service or incidents in the work situation are always followed up by a white investigator, great care being taken not to betray confidences or to start recriminations between informants and supervisors. In a migratory labour study, where reasons for marked seasonal fluctuations are in the first instance being studied by discussion with workers on arrival and departure, an ancillary investigation will be conducted in the rural areas to determine what in fact are the local conditions which give rise to movements and what the migrant worker does when he is back in his village, as compared with what he states he intends to do. Not only does this check-back constitute a form of validation of attitudes, in the sense that if allegation squares with fact, the attitude is very likely to be genuine; but it may also give insight into the circumstances which give rise to the development of beliefs, myths, and stereotypes in the African's view of the new circumstances in which he finds himself. The possibilities of misunderstanding are legion, due to language difficulties, inadequate communication channels (one often does not trouble to explain things, or to look at problems from an African point of view when formulating explanations, or to choose an adequate mouthpiece), and lack of appreciation of Western cultural and technological requirements.

Some valuable information concerning occupational attitudes and motivation has already been obtained by means of the combined interview and group discussion method. In a study¹ of preferences among African mine-

¹The report of this investigation was confidential to the sponsoring company.

workers for employment at certain mines, which greatly influenced the flow of labour, particularly of experienced workers, it was found that the following were the principal factors determining choice, in order of importance: (a) good human relations underground; (b) managerial interest as reflected in accommodation, information, and welfare matters; (c) remuneration; and (d) arduousness of underground working conditions. The relatively low rank order of remuneration may seem surprising; but there is in fact little difference in rates of payment from mine to mine, as these are governed by agreements. Part of the wage is in the form of quarters and rations which do vary in quality from mine to mine. Cash wages show minor variations only, particularly in terms of bonus payments. In another study of job preferences of African, Indian, and European industrial operatives in South Africa, conducted by means of group discussion and directed interviews, considerable quantification of results was achieved, despite the fact that the procedures were entirely oral (4). In the interviews, some open-ended questions were put, but the majority of items were statements which informants were required to endorse on a three-point scale after full explanation and discussion of each item. They were also asked to comment on their ratings and encouraged to discuss at length any item that particularly interested them. These comments, together with the group discussion data, were subjected to content analysis and χ^2 tests were applied to the frequency with which certain statements were made in the three ethnic groups. Informants were also asked to rank a number of job satisfaction and dissatisfaction factors, coefficients of concordance being calculated for the average rankings of each ethnic group.

This study threw further light on the relative importance of wages and good working conditions to Africans in industrial employment.

The sample drawn from the engineering industry ranked job satisfaction factors in the following order: (a) opportunities for advancement; (b) good wages; (c) job security; (d) considerate management; (e) happy working conditions. (Coeff. of concordance .213 $p < .01$). This result virtually reversed the order in which good human relations and remuneration were placed by the migratory mine labourers. The apparent contradiction is explained by the fact that secondary industry offers a much wider range of employment and wages to its largely urbanised African employees than the mining industry to its migrant labourers. But even in secondary industries, high wages and responsible or skilled duties are the exception rather than the rule, and they are therefore correspondingly highly prized.

The very different conditions which govern the recruitment and employ-

ment of migratory mine labourers and industrial operatives was also reflected in the job dissatisfactions expressed by the latter. Job insecurity and frequency of retrenchments were considered to be the most serious disincentives, closely followed by lack of consideration on the part of management, whilst low wages ranked fifth on the list. That to the non-migratory worker, whose connections with rural areas or tribal life have become tenuous, insecurity is a far more serious matter than low wages, due to labour regulations which may prevent an unemployed labourer from remaining in or re-entering an urban area. By contrast, the life of the mine labourer is completely secure. For the period of his contract he is looked after in every way; his accommodation and his food are provided; the contract is equally binding on the employer as on the employee; the majority wish to return to their tribal area, but they are encouraged to renew their contracts after a suitable period. This security, the absence of worry about everyday affairs, the safety of life in the compounds as compared with the hurly-burly and frequent lawlessness of the townships was in fact frequently commented on by mine labourers in group discussions, when comparing the advantages and disadvantages of mining and industrial employment.

The white operatives in the same engineering industry, though voicing no complaints about their actual remuneration, mentioned low wages 4th in order of frequency in an open-ended item of the interview schedule, which sought information about job satisfactions. Their number one disincentive was poor supervisory and managerial practices, followed by inferior working conditions and lack of coöperation from fellow employees and superiors. In their ranking of job satisfactions, happy working conditions, security, opportunity for advancement, and considerate management all preceded high wages (Coeff. of concordance .215, $p = .005$). That job satisfaction in the white group is associated less with high wages than with good human relations and managerial competence fits in with the fact that whites occupy a favoured position in the South African economy and that they can take good wages and Union protection far more for granted than other working conditions, which are bound to vary considerably from one enterprise to another.

These examples, from group discussion and interview studies, demonstrate how, by means of cross-comparisons between sociologically distinct groups, some measure of validation of the job attitudes expressed by these groups can be obtained. The establishment of logical relations between socio-economic factors and the nature of the attitudes is the essential feature of this validation.

C. PROJECTIVE TECHNIQUES

The *TAT* technique has frequently been used in African studies to measure attitudes rather than to explore the mainsprings of personality. When used in this manner, the pictures must be structured to arouse associations relevant to specific areas. How to ensure that they will possess the intended stimulus properties is a problem that is still far from being solved. E. T. Sherwood (6) has made an important methodological contribution to the general problem of designing *TAT* pictures for Africans in a state of cultural transition, but although his criteria dealt with the need for appropriateness in the human figures, the physical environment and the situations presented, the requirements of appropriateness were not defined in detail, neither for the Swazi people, with which he was concerned, nor for African cultures generally. To attempt to do so would presume a knowledge concerning perceptual processes and habits in Africans which is still fragmentary today. Preliminary investigations indicate a profound unfamiliarity with the conventions of graphic representation, even among fairly well educated Africans. The rules of perspective drawing are not understood. A group of industrial operatives, presented with a picture of cattle grazing in a field, correctly identified those in the foreground, whilst those in the background, drawn smaller to simulate distance, were sometimes seen as hyenas or similar animals. A workman, standing on a box obscured by fellow-workers whom he was haranguing, against a background of factory buildings and chimney stacks, was seen by some as a giant catching the smoke that emanated from the stacks. Many did not perceive the latter as aspects of factory buildings at all, and the attempt to evoke attitudes concerning the work situation thus failed to come off. Conventional graphic details in the postural or facial representations of persons frequently suggested mutilation or blindness. Whether the latter association symbolises the state of cultural confusion experienced by many Africans today, whether it is an expression of their preoccupation with a scourge which is common in Southern Africa, or whether it is merely a misinterpretation, at a purely perceptual level, of conventional pictorial cues, it is not possible to say in the present state of our knowledge concerning African perceptual habits and concerning the effects of their personality structure on the development and functioning of these habits. The latter should therefore be investigated per se, both as a preliminary to the structuring of *TAT* pictures, and as a basis for the interpretation of attitudinal and other personality material obtained by means of projection material in African cultures.

The Incomplete Sentences Test is an economical projection method, free

from objections of perceptual indeterminacy, applicable to both literate and illiterate subjects, and lending itself readily to quantitative treatment. It can be designed specifically for any attitude, but experience with the test for Africans in the Union of South Africa is limited so far to occupational situations. Examples of items that have been used are the following: "If only my job . . ."; "When I work . . ."; "A clerk who works for the Government . . ."; "In one's job one often has to . . .".

Together with data obtained from an open-ended question, "Tell all the things I like about my job," "Tell all the things I dislike about my job," this method has given insight into the job attitudes of the African clerk, and of his rôle expectations vis-à-vis his superiors, colleagues, and the public. One of the striking findings is the emphasis which is placed on the service. Of a group of 205 African white-collar workers, 26.3 per cent gave this as a source of job satisfaction, as compared with only 2.9 per cent of a similar group in the United States. Serving others was ranked third by the Africans, seventh by the Americans, and for two professional groups, its rank order was first and fourth respectively (7). These findings raise an important validity problem, for many observers of African affairs would insist that in fact the pursuit of individual interests is more evident in the emergent African societies than service to the communal cause. If the contradiction does in fact exist, it is less likely to be due to idle endorsement of a high-sounding ideal than to a genuine duality in the character of persons who are still in the process of changing one social order for another, who have only recently become aware of individuality and the ways whereby it can be satisfied in western culture, but who also realise, perhaps more intellectually than emotionally, that ultimately the satisfaction of this individuality depends on the establishment of their own nationhood, for which service in pursuit of communal ends is an essential condition.

This same validity problem recurs in another study by R. Sherwood (8) on the rôle expectations of Bantu clerks, employed by a public authority in Johannesburg. They were required to write an essay on, "What I expect from an efficient Bantu clerical worker employed in . . . department." The attitude of being "helpful, sympathetic, and kind" to the Bantu public was found to be the most important, being mentioned by 78 per cent of the group. The requirement of being "tactful, discreet, and patient," mentioned by 48 per cent, was deemed necessary or ideal for coping with the needs of the public, though only 9 per cent specified the need for these qualities to be exercised in relation to their white supervisors. Three other rôle-expectations which structured the ideal requirements of a clerk in approaching the pub-

lic were, "to be approachable, pleasing, and cheerful" (29 per cent), "to treat all clients impartially" (27 per cent), and "to set an example to other Bantu" (21.5 per cent). Observations of how African public servants actually do treat the public do not fit in with the ideal of a considerate, helpful friend. Aggressive authoritarianism is more frequently in evidence. R. Sherwood, quoting Merton, explains this contradiction in the first place in general terms, by referring to the potential source of conflict between officials and the public in a bureaucratic structure, where the public servant is only nominally a servant, but in fact is in a superordinate position, which enables him to categorise the individual needs of members of the public and to deal with them in terms of the relevant regulations. The latter, on the other hand, will tend to demand that such peculiarities as their cases may present should be treated on their merits. The impersonal and categorical treatment which they frequently do receive will therefore give rise to the charge of bureaucratic arrogance.

In South Africa, this general conflict situation is aggravated by the pattern of interracial relations. The conduct of the African public is governed by complicated regulations, subject to frequent changes, local applications, or differences in interpretation. Consideration for individual circumstances is therefore highly desirable, though difficult to apply in practice. In attempting to meet this need, the African public servant is gravely hampered by his marginal position. On the one hand, he owes loyalty to the public authority which employs him and he must be pleasing to his white supervisors on whose approval his position and promotion largely depend. In his official capacity he must administer laws and apply regulations which differentiate between white and black and which are vexations to the latter, particularly in urban areas. On the other hand, as a member of the African group himself, he owes loyalty to his own people and naturally seeks to avoid their opprobrium. Sherwood sees three ways out of the dilemma in which the African public servant finds himself: (a) to resign his job; (b) to conform to one set of rôle expectations and take the consequences of non-conformity to the other (which, if he chooses loyalty to the employer, may lead to his rejection by his own group, followed by a need to express a retaliatory aggression towards his fellow Africans); (c) to conform in part, though not wholly, to both rôle expectations (in which case the resulting inner resentment and tension about this ambivalent position would give rise to hostility both to his people and to the administration, expressed at one time in the form of aggressive behaviour towards the public, and at other times more covertly in the form of dishonesty, lack of integrity, inadequate work output, or slipshod work).

However this may be, these examples stress the methodological importance of obtaining the fullest possible circumstantial information when conducting attitude studies in African populations. Discrepancy between manifest content of an attitude and actual behaviour is not just a matter of the usual lack of validity, resulting from the desire to give acceptable answers; it is an indication of the genuine complexity of the attitudes themselves, a result of the changing and conflicting cultural situations in which many Africans, particularly those outside tribal areas, find themselves. To evaluate the quantitative results from attitude tests, an intimate grasp of the cultural background factors is therefore indispensable.

D. THE "CONVERSATIONS" ATTITUDE INVENTORY

In measuring the attitudes of Africans towards Western social customs, ethical values, legal codes, and sanctions, a new attitude inventory technique has been found useful, which may be applicable in other contexts. This inventory (1, 2, 3) presents 40 imaginary conversations among five Africans, who discuss the ways in which Africans should behave in a number of every-day situations. Each gives his opinion why one should or should not act in a particular way. These opinions can be grouped under eight attitude headings, namely:

1. Ethico-legal (one should not be involved in brawls in the street, because fighting is undignified and unworthy of a reasonable human being).
2. Religious (when someone hits one in an angry mood, one should not hit back for God has ordered that man should show forgiveness and patience towards his enemies).
3. Expediency (one must do what causes least trouble).
4. Tribal traditional (one need not trouble about contour ploughing, for it is not the agricultural custom of our people).
5. Fear (one must not get drunk, for the police arrest one and punish one heavily).
6. Compliance (one must wash oneself every day because it is the custom of the white people).
7. Non-compliance (one need not honour a labour contract if it does not suit one to do so, for most of the laws have been drawn up to serve the interests of the white man only. The African need not respect such laws, and can break them if it suits him).
8. Pleasure (one must wear clothes that are neat and in good repair, because this makes one look gay and attractive).

In answering the inventory, subjects are required to indicate, for each of

the 40 situations, which speaker gives the wisest reason. This is ranked 1, whilst the most foolish reason is ranked 5, the others being ranked 2, 3, or 4 according to their wisdom. By averaging the ranks given to each opinion, sorting the opinions according to the attitude they represent, and finding the mean for each set, the rank of each attitude for any particular group of subjects can be found, together with the scatter of the opinions about this mean value. From this scatter, it is possible to indicate in what kind of situations deviations occur from the relative importance which in general is attached to an attitude. Similarly, it is possible to score how and to what extent individuals deviate from the group attitude pattern, or how differently constituted groups deviate from each other. The material is amenable to the usual statistical methods to test significance of observed differences. Within any particular group, the rank-order of attitudes is maintained highly consistently, reliability coefficients ranging from .81 to .96. Within the attitudes, internal consistency varies somewhat, but the median split-half coefficient was found to be .82. Consistency was, however, unsatisfactory for the opinions relating to the pleasure attitude, which was therefore eliminated from the questionnaire. The general pattern of the attitude rank order is for the ethico-legal attitude to be most favourably endorsed, closely followed by the religious. The higher the education of the subjects, and the older, the greater the gap becomes between the two. A correlation of about .40 was also found between intelligence as measured by the progressive matrices test and the degree to which individuals favoured ethico-legal opinions. The correlations between intelligence and the other attitudes were very low, but all negative. The order of the remaining attitudes, all fairly close together, was generally expediency, traditional fear, compliance, and non-compliance, but some significant differences were observed between different types of groups, and groups tested after intervals of from 15 to 18 years. Thus in younger and less educated groups, expediency tends to outrank the traditional attitude, and non-compliance to predominate over compliance. The fear attitude is slightly more potent with older persons, and has also come more to the fore in groups tested during the last few years, as compared with groups tested before the war. In one group of high school pupils above the age of 18, the non-compliant attitude was ranked third, as compared with seventh in other groups. In this school there was considerable extremism amongst both teachers and pupils, and severe conflict with the governing body, which resulted eventually in the dismissal of a number of staff members. It is of interest that this state of affairs should be reflected in the inventory responses. This leads on to a consideration of the validity

of this particular inventory method, which in its written form is applicable only to literate persons who have received at least a primary school education. That educated Africans understood the ethical and statutory foundations of conduct in Western societies and that this understanding deepened with age and education was clearly demonstrated by the analysis of the inventory data. Whether they were also inwardly accepted as a code for African behaviour at the verbal level, was more difficult to decide on the basis of the available material. It was shown that the rank-order of attitudes did not differ significantly for high school pupils (only those aged 18 and over were tested) at Mission and Government institutions, though one might have expected the religious attitude to have been more strongly endorsed at the former, if lip service or the desire to please had played an important part in determining inventory responses. Nor was there a tendency for non-compliance to be more strongly endorsed at schools run by Africans, as compared with Government schools. The shifts in attitude ranks consistent with changing circumstances, also support the view that responses were genuine at the verbal level. The most significant evidence of all, however, is that none of the attitudes was endorsed in a purely stereotyped manner. One might have expected this particularly in the case of ethico-legal opinions (which occurred in every one of the 40 situations, whereas the other seven occurred in various combinations and frequencies), which could easily have been looked upon as the "right" one, and therefore to be endorsed. The considerable scatter of opinion ranks about their mean attitude rank, in the case of the ethico-legal as well as the other attitudes, argued strongly against a stereotyped response tendency. Furthermore, deviations could generally be linked with some feature in the situations which indicated that these had been considered on their merit, as they affected African rights and status, rather than in the light of what the dominant white group would have liked them to say or do. Thus ethico-legal opinions obtained a relatively low rank when the situations to which they referred involved elements of racial discrimination. The argument that Africans must pay their taxes in order to enjoy the privileges of citizenship, was relatively less favourably received than the opinion that non-payment of taxes is justified because Africans do not enjoy their fair share of the amenities which the State makes available to its citizens. The view that if a shopkeeper chooses to serve white customers before Africans the only thing to do if one does not like this is to take one's business elsewhere, found less favour than the non-compliant view that Africans have a right, even in a private establishment, to be served in their proper turn. These and similar

responses implied a realisation that discrimination destroys the ethical basis of statutory and customary requirements.

On the other hand, in the relations between individual members of the two races, the ethical view always prevailed, and the opinions that the African need not be courteous to white men because the latter are never courteous to him, or that an African servant can help himself to his white employer's food, tobacco, or cash, because whites so often treat Africans badly, were definitely rejected. The study disclosed no evidence that as a result of legislation aimed at a separation of the two races and the entrenchment of differential rights, there had been any weakening in the appreciation and acceptance of the essentials of Western codes, or any tendency to repudiate them in the individual relations between black and white. Another interesting finding was that in such matters as the priority of property rights over the needs of the hungry, or the propriety of sex relations without the woman's freely given consent, there was a tendency towards a relatively less favourable endorsement of the ethical than of the tribal traditional attitude, with its recognition of the primacy of natural needs. Nor did the rational point of view about witchcraft entirely convince even educated Africans that the traditional belief concerning its effectiveness could be entirely discounted.

A first attempt was made to validate the inventory against actual conduct, by correlating supervisors' personality ratings of African clerks employed by public authorities with (a) their endorsement of each of the seven attitudes, expressed in terms of Z scores; (b) their deviation from the overall attitude pattern of their group, regardless of type and direction. None of these correlations was significant. There was evidence, however, that supervisors had inadequately distinguished between skill and personality qualities (correlations of the personality ratings with a combined criterion were .97, .97, and .96 for three samples) and little significance can therefore be attached to this negative result. Furthermore, the ambivalent position in which, according to R. Sherwood's data, the African public servant finds himself, and the conflicting expectations of their rôle held by the African clerks themselves and by their white supervisors, casts doubt on the usefulness of merit ratings as criterion measures. Work is still in progress to relate individual attitude profiles to other data obtained from biographical inventories, projection, and objective personality tests.

On the evidence available so far, the technique has promise as a means of measuring the attitudes of educated Africans. It has, moreover, been found possible to put the major propositions and arguments of the inventory

in actual group discussions, so that the method need not be limited to educated groups.

E. SUMMARY

A review has been presented of methods whereby attitudes can be studied in African communities in various stages of transition from tribal to Western culture. The techniques of the directed interview, group discussion, *TAT*, incomplete sentences, and attitudes inventory were discussed. In the measurement of African attitudes the problems of rapport and of validity require particular attention. In addition to the usual validity problem whether verbalised attitudes are consistent with actual behaviour, there is the difficulty, in the case of African informants, of ensuring that the verbalised attitudes reflect their actual beliefs, ideas, and feelings. This is as much a matter of the correct choice of method and its skillful manipulation as of the establishment of proper rapport. Important ingredients of successful rapport are the careful timing of investigations with reference to events of cultural or local political significance; the use of the vernacular; the avoidance of pencil and paper except in the case of well-educated groups; the correct contacts and the employment of carefully selected and trained field-workers, preferably graduates in the social sciences. Validity can be determined in a number of ways, depending on the nature of the investigation and the method employed. Checks on facts implicit in the formation of an attitude; group differences in attitudes related to the particular rôle and status in society of the members of each group; changes in attitudes consistently related to social circumstances, have all been found useful as validity indicators. In work situations, job attitudes can also be related to assessments of work performance by supervisors, though conflicting rôle expectations in multi-racial societies may render merit rating criteria suspect. The problem of structuring *TAT* pictures in such a manner that attitudes relating to specific areas of interest will be evoked was discussed in some detail. Research into the development and functioning of perceptual habits in African cultures is necessary, both as a basis for designing *TAT* series, and for the interpretation of responses.

Details were given of a promising inventory, designed to measure attitudes towards Western customs, ethical and legal concepts, and administration of justice. The inventory presents conversations between Africans who discuss the correct mode of conduct in a variety of situations. Each topic is discussed by five speakers whose reasons for acting or not acting in a particular manner are ranked by the subjects. Statistical treatment yields the relative strength of eight different attitudes in individuals

and communities. It was shown that the reliability of the scale is high, .92 for the rank order in which the attitudes were placed, and from .85 to .51 for the internal consistency of six of the eight attitudes. Validity data were also presented.

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THE PSYCHO-MOTOR DEVELOPMENT OF AFRICAN CHILDREN IN THE FIRST YEAR, AND THE INFLUENCE OF MATERNAL BEHAVIOR*

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The starting point of the work to be described was a study of the psychological state of children suffering from the kind of malnutrition known as kwashiorkor made during 1954 in the Medical Research Council's Infantile Malnutrition Unit at Mulago Hospital, Kampala. The disease is most frequently seen in children aged between one and two years and is probably largely due to inadequate diet at the time of weaning (4).

It was obviously necessary to observe at the same time a group of African children of the same age, who were not malnourished, and it was realised at once that these children were precocious in their psycho-motor development. Since 1954, the work has been extended by examination of the younger and older siblings of the children seen originally, of other children of all ages (including new born) up to six years, and of children from various social strata. The children seen at first were of poor and poorly-educated families (2).

In all 308 children have been examined by the writer in Uganda. Of these, 51 were tested twice, the second time a year after the first, and 5 three times at yearly intervals. Fifty-four children were seen in their own homes, and the others were seen in the Medical Research Council's building, in dispensaries, or at a nursery school. A further 16 children, 8 to 21 months old, were studied in Johannesburg with the collaboration of the National Institute for Personnel Research under the direction of Dr. S. Biesheuvel, and 30 more under one year in Senegal, in the centres at Dakar under Professor J. Senecal, of the Institut des Hautes Etudes, and at Popenguine under Med. Col. Dr. A. Raoult. The results of the tests on the West Afri-

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can children were discussed with Dr. Solange Faladé, who working at Dakar under Professor Senecal had tested by the same methods another 150 children aged up to two years (1). The studies in Kampala and Dakar are being carried out as part of the work on growth and development organised by the International Children's Centre, not only in those places but also in London, Stockholm, Paris, and Zurich.

For the new-born children, the method of examination evolved by André Thomas and his colleagues was used (5). The older children were given Gesell tests, modified in only one way; the child and his mother, and the tester, all sat on the ground. The tests were supplemented by an interrogation of the mothers.

The results of the tests showed an all-round advance of development over European standards which was greater the younger the child. Thus from the first day the child when drawn up into a sitting position, could keep his head from falling back, and held sitting had his back straight. In the first days many children appeared to be able to focus their eyes. At six weeks the child could control his head whatever his position. At four months he could sit alone and at eight months stand without support, at 10 months he could walk, and at 11 months he was able to use his thumb and fore-finger accurately for picking up small objects. The photographs (Figures 1 to 7) illustrate some of the precocity that was found. The precocity was not only in motor development; it was found in intellectual development also. It is not always realised that intellectual development is displayed very clearly in the use of the Gesell material. To take an elementary example, the child who merely looks at the cubes and then picks them up is demonstrating a series of intellectual processes, and for the building of a tower with the cubes, more complex processes are needed, in addition to the greater manual dexterity.

Although most of the African children had never seen anything resembling the test material, they used it in the same way as European children and succeeded in the tests earlier than those children. Their interest was lively, and their personal-social relations excellent. They made very good contact with the tester, turning and "talking" to her, smiling at her, and trying in every way to communicate with her.

The development was not entirely homogeneous in all the sections of the tests. Up to the fifth month, the motor precocity was remarkable, especially in regard to posture. Between the fifth and seventh months, adaptivity, language and personal-social relations came to equal the motor development: the level was that of European children two or three months older.

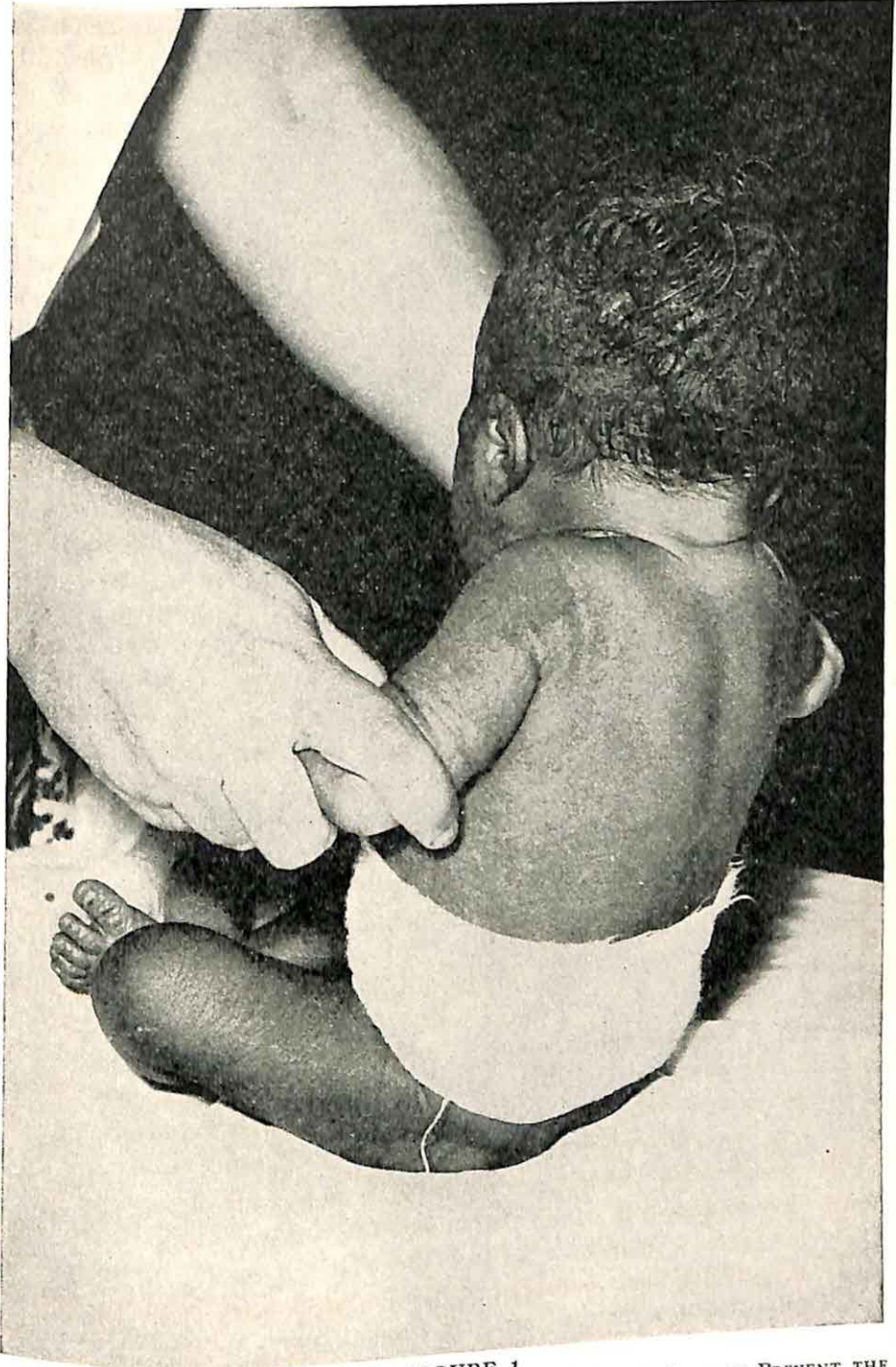


FIGURE 1
NINE HOURS OLD, BEING DRAWN UP INTO A SITTING POSITION, ABLE TO PREVENT THE
HEAD FROM FALLING BACKWARDS
(European child, six weeks)



FIGURE 2
TWO DAYS OLD, WITH THE HEAD HELD FIRMLY, LOOKING AT THE FACE OF THE
EXAMINER
(European child, eight weeks)

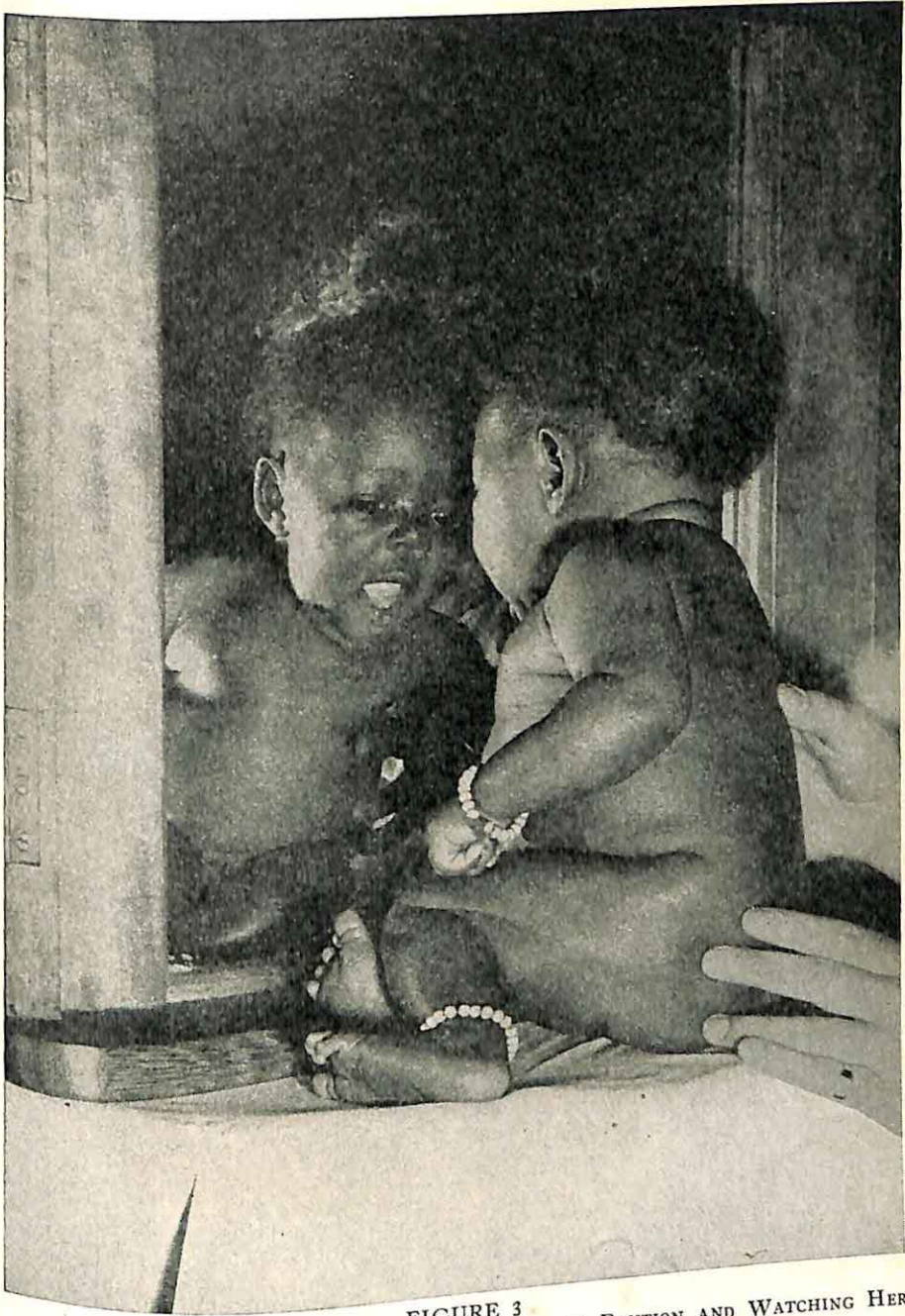


FIGURE 3
SEVEN WEEKS OLD, SUPPORTING HERSELF IN A SITTING POSITION AND WATCHING HER
REFLECTION IN THE MIRROR
(European child, 20 weeks)



FIGURE 4
FIVE MONTHS OLD, HOLDING HERSELF UPRIGHT
(European child, nine months)
TAKING THE ROUND BLOCK OUT OF ITS HOLE IN THE FORM-BOARD
(European child, 11 months)

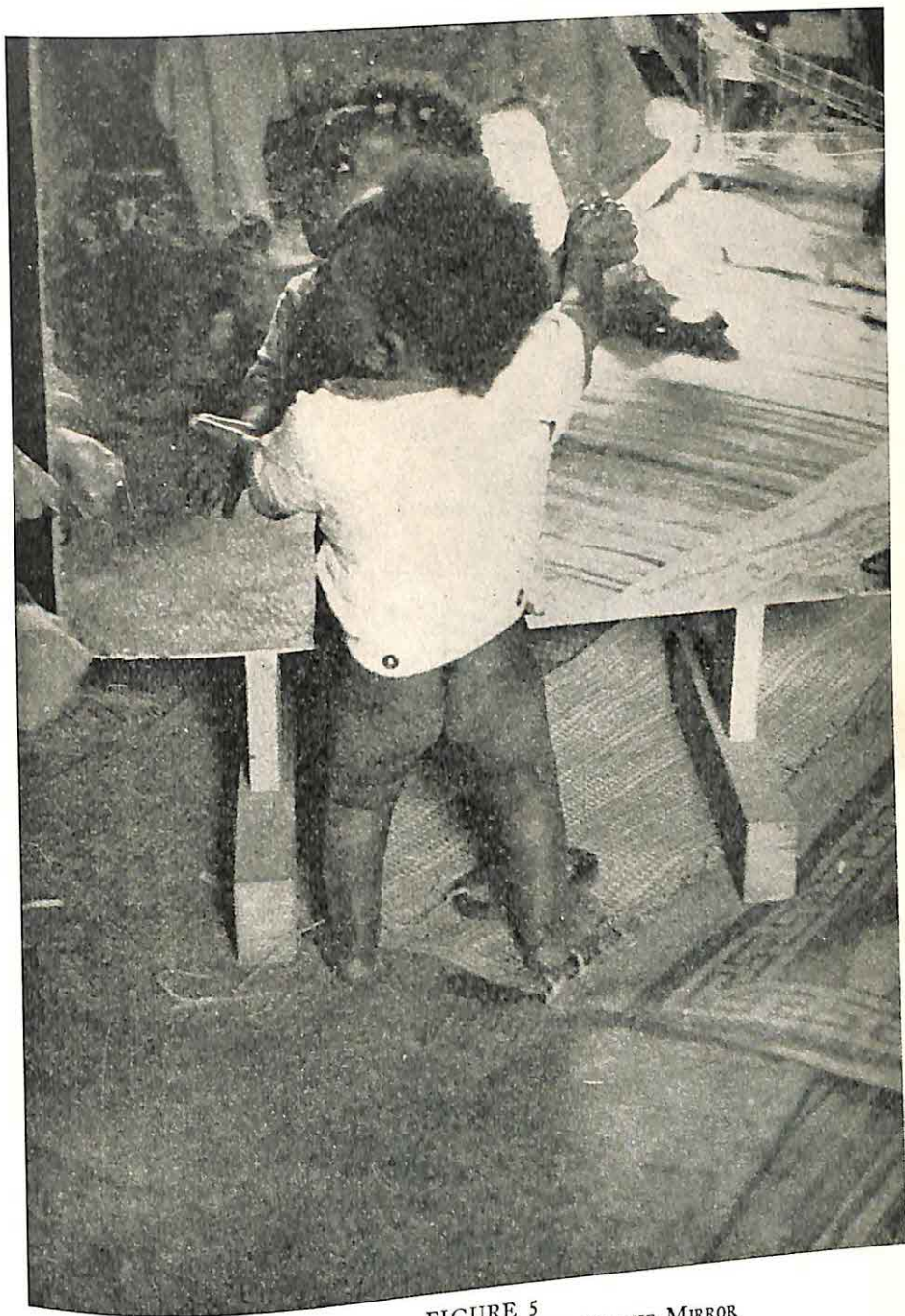


FIGURE 5
FIVE MONTHS OLD, STANDING AGAINST THE MIRROR
(European child, nine months)

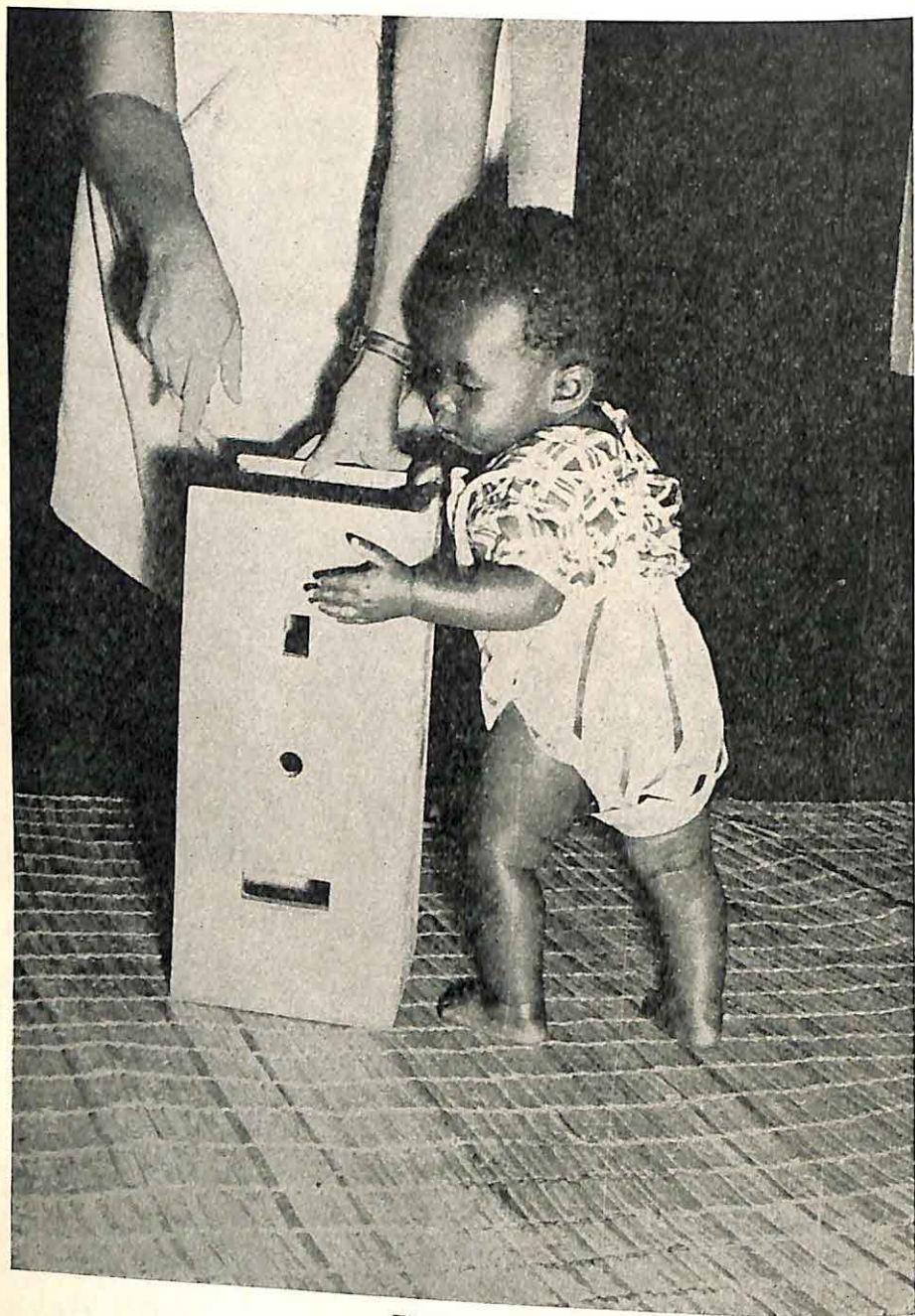


FIGURE 6
SEVEN MONTHS OLD, WALKING TO THE GESELL BOX TO LOOK INSIDE
(European child, 15 months)



FIGURE 7
ELEVEN MONTHS OLD, CLIMBING THE STEPS ALONE
(European child, 15 months)

Children examined before and after weaning showed marked difference in their behaviour and in the results of their tests. The attitude of the mothers towards the children seemed to be largely responsible for the differences. Before the child is weaned, the mother's whole interest is centred on him. She never leaves him, carries him on her back—often in skin-to-skin contact—wherever she goes, sleeps with him, feeds him on demand at all hours of the day and night, forbids him nothing, and never chides him. He lives in complete satisfaction and security, always under her protection. He is, moreover, continually being stimulated by seeing her at her various occupations and hearing her interminable conversations, and because he is always with her, his world is relatively extensive. He is also the centre of interest for neighbours and visitors, to whom he is offered, as a matter of course, as soon as the usual greetings have been exchanged. If, however, he shows the slightest sign of displeasure, he is at once taken back by his mother. During the Gesell tests, the loving and warm behaviour of the mothers, always ready to help if help would be valuable, showed very clearly how the children lived surrounded by affection. The mothers' interest in the tests and the detailed answers they gave to the questionnaire were further evidence of their solicitude.

Weaning makes a sudden change in the child's life. The mother does not only stop giving him the breast, but often behaves as though she is deliberately trying to effect a separation; inevitably the child becomes miserable and clings to her all the more. Sometimes the separation is geographical, with the child sent for many months to his grandparents and seldom visited. This custom is especially common amongst the lower social classes of the Baganda (the tribe living around Kampala).

It might be argued that the precocity of the child at birth must be a factor of greater importance than the behaviour of the mother and the way in which the child was brought up. In our opinion, the precocity, the behaviour, and the upbringing are closely related. The arrival of a baby is always looked forward to with great pleasure (sterility is thought to be a calamity) and is not a source of anxiety for the future. The mother is in no way upset by her pregnancy and is active up to the moment of delivery. The unborn child is the chief object of her life, especially as she believes that any other interest may have an adverse affect on him, and as soon as he is born he is not only her constant care but is laid or sat beside her, held up and encouraged to stand, and played with constantly.

A few children who were being brought up in the European way, passing most of their lives in their cots and fed at regular intervals, made an in-

teresting comparison with the others. They did not show similar precocity after the first month, and later were inclined to be quiet and subdued. On the other hand, children for whom weaning had not caused a sudden break in the way of life retained their liveliness after the weaning, and developed without interruption.

It would be of great interest to increase the number and scope of these comparisons. The placidity of the African woman during pregnancy, and her happy acceptance of motherhood may be related to the slight degree of tonic flexion in her new-born child (3); it might be found that the African children resembled those of European women who had greatly desired to become mothers, and had learnt during pregnancy the methods of relaxation recently introduced into Western countries. An ever-increasing number of African women are adopting European customs and habits, and the effects of the changes should be investigated as fully as possible. In the children of the more sophisticated families, the study of development would undoubtedly be complicated by failures of breast feeding. It is well known that sophistication and ability to breast-feed are apparently becoming incompatible. In all the African mothers seen during the work that has been described, complete failure of breast-feeding had occurred in only two, of whom one had a breast abscess. Even partial failures were rare, and mostly occurred amongst the more wealthy and more intelligent.

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CHILD ANIMISM: I. A CRITICAL SURVEY OF CROSS-CULTURAL RESEARCH*

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A. THE PROBLEM

In his earlier studies Piaget postulated that young children pass through a stage where their relationship to the physical world is characterized by "animism," defined broadly as "the tendency to regard objects as living and endowed with will" (22, p. 170). The present status of this concept is somewhat uncertain. The first eight volumes of the *Annual Review of Psychology*, which may be taken as an authoritative publication, contain no entry under this heading in their index. Whilst Piaget has made no explicit disclaimer of his views on animism, his interests appear to have shifted away from the issues of his more "verbalistic" period; thus in a recent symposium on the problem of "stages" in child development (21) he made no reference whatsoever to animism. On the other hand Anthony, an influential advocate of the application of Piaget's theories to child psychiatry, has recently stated about animism that "its universality has been claimed, challenged and vindicated" (1, p. 27).

Although its originator may have turned to fields where positive knowledge is more readily and unambiguously established, the question of animism remains one of considerable interest. It has given rise to numerous investigations whose flow has by no means dried up, in spite of the fact that they received comparatively little notice in most books on child psychology.¹ Several important studies, especially in the cross-cultural area, have been published after the appearance of Huang's (9) comprehensive appraisal of the literature. A brief account of these, together with some notice of the older work, is desirable for arriving at an assessment of the present position in this field.

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¹Where the topic is mentioned, the treatment is sometimes far from satisfactory. Here is a deplorable example, culled from a recent work: "Like primitive peoples, young children, because of their limited knowledge and experience, do not distinguish between living and inanimate objects" (12, p. 119).

B. OUTLINE OF RESEARCH

The various studies will be grouped on an ethnic and regional basis. Work previously described by Huang in general only requires a short reference to the salient findings. In other cases somewhat more detail will be provided.

1. *White American Children*

a. *Lerner* (18). This study was really concerned with "moral realism," but some of its questions were so formulated as to yield answers that can be taken as directly indicative of animism. Piaget's story of the broken bridge (24, pp. 250-1) was used with 389 children from homes of contrasting social status. The main findings were that children aged six and seven from poorer homes gave 82 per cent animistic responses, and this declined to 31 per cent by ages 10 to 11; the corresponding figures for the more favoured group were 62 and 15 per cent respectively.

b. *Deutsche* (6). Interest was focussed here on the development of concepts of casual relations in 745 children aged 3-16. The method involved the explanation of physical phenomena and the proportion of animistic responses did not exceed two per cent with any of the age groups. No significant differences related to the occupational status of the parents were discovered.

c. *Russell et al.* (25, 26, 27, 28). This series of studies is of exceptional importance, and it was to them Anthony was referring when he wrote that the universality of animism had been vindicated. The work was certainly one of the most carefully designed and executed attacks on the problem. In each of the two parts to be considered the samples consisted of several hundred children.

The procedure of the first part (25), which dealt chiefly with younger children, was that of "individually questioning each subject concerning the animate or inanimate nature of a series of objects . . ."; in the second part, concerned mainly with older children (26), the same material was group-administered as a written test.

The results showed, according to Russell, that "it is possible to classify individuals into the stages of animism suggested by Piaget" with a high degree of accuracy, but there is a greater scatter at any given stage over different age ranges than Piaget thought. The outstanding conclusion was that there occurs an orderly progression of stages with increasing age, from early nursery school levels upwards.

No significant sex- or socio-economic differences were encountered.

2. *American Indian Children*

a. *Dennis and Russell* (5). These authors questioned 24 Zuni children on whether each of a series of objects was alive or dead. Apparently some four-fifths of the subjects were found to be in Stage I of animism, i.e., "retarded" in comparison with white American children.

b. *Dennis* (4). In this study with 98 Hopi subjects two different approaches were employed, apart from a group test that will not be considered here. The first followed the lines described for the Zuni above, the other was the "bridge story." Numerical results will be presented later, but it may be noted that the conclusions were substantially the same as those reached in connection with the Zuni. However, Dennis went rather further in expressing the view that "the earliest ideas of children are uniform in all societies and are the product of universal child experiences and mental immaturity."

c. *Havighurst and Neugarten* (8). Theirs is numerically the most extensive coverage of non-white children, as 714 subjects were examined. They used a modification of the bridge story, whereby a boy cuts his foot with an axe after stealing a melon.

The results can be crudely summarized by averaging the percentages of positive replies to the operative question, "Did the axe *know* that he stole the melon?" for all 10 tribes investigated. At ages 6-11 the mean was 70 per cent, with a range from 53-90; the corresponding figures for 12-18-year-olds were 53, and 25-82. With nine out of the 10 tribal groups the percentage decreased for older age groups, in five cases significantly.

The interpretation placed on this by the authors is that "the failure of most of the groups to show 100 per cent animism at the earlier age" (8, p. 159) should lead to a questioning of Piaget's hypothesis.

Advantage can be taken of the fact that two sets of independent investigators worked with two of these small and relatively homogeneous tribes: comparative numerical findings are given in Table 1 for Hopi and Zuni children.

3. *Chinese Children*

a. *Huang, Chen, and Yang* (10). In this investigation simple physical experiments similar to those of Deutsche were demonstrated to 40 children aged 5-12, divided into two groups according to socio-economic background. The latter factor failed to produce any differences, and it was claimed in conclusion that "Mystical and anthropomorphic explanations are almost completely absent."

b. *Huang and Lee* (11). Forty children between the ages of 3:5 and 8:7 were questioned as to whether each of a series of objects was "living," "has life," "feels pain when pricked," and so on. A considerable proportion² of the responses were certainly animistic when taken in isolation, but the authors emphasized that there was a good deal of inconsistency with respect to the different criteria; e.g., an object might be said to be "living," but not to "have life." On this ground it was then argued that the children's answers cannot, as was done by Piaget, be taken as evidence for the existence of animism; rather they were said merely to reflect uncertain linguistic usage and a lack of sharp differentiation in the child's mind, not positively animistic conceptions.

TABLE 1
COMPARATIVE PERCENTAGES OF STAGE I ANIMISTIC RESPONSES REPORTED BY INDEPENDENT INVESTIGATORS AMONG ZUNI AND HOPI CHILDREN

INVESTIGATORS AMONG ZUNI AND HOPI CHILDREN						
Tribe	Investigators	Methods	Ages			N
Zuni	Dennis and Russell (5)	Questions on objects	8-16			24
			83%*			
	Havighurst and Neugarten (8)	Modified bridge story	6-11	12-18		92
			60%	52%		
Hopi	Dennis (4)	Questions	12-13	14-15	16-17	95
First and			46%	56%	36%	
Third Mesa	Havighurst and Neugarten (8)	Bridge story	64%	47%	9%	98
First Mesa		Modified bridge story	6-11	12-18		70
Third Mesa			63%	30%		
			71%	66%		99

*From the way the findings are phrased it is not possible to be certain about the base for computing percentages; the one used here represents a minimum.

It should be added that this interpretation was challenged by Strauss (2), who tried to show that the data were compatible with Piaget's views.

4. *European Children*

a. *Askar* (2). This research was carried out in Birmingham, England. Written tests were given to 452 school children aged 7-12, and 262 more aged 5-11 were personally interviewed. The types of objects considered included sun, moon, cloud, wind, and such other active and moving ones such

²A summary of the main quantitative results will be found in Table 2.

as bicycle, candle, and motor car. The results look somewhat odd, being grossly at variance with most other research in the field. Thus in the oral administration the over-all percentages of animism obtained from 5-, 6-, and 7-year-olds were respectively 1, 17, and 7. The general incidence of animism according to the written test was about 21 per cent, with a comparable figure of only 6 per cent for the interviews.

This author was extremely critical of Piaget and his methods, going so far as to state that Piaget often suggested their answers to the children. Not surprisingly the conclusion was that there is in fact no spontaneous animism.

b. *Klingberg* (16). A replication of the work of Huang and Lee (11) was undertaken in Sweden with 97 children aged between 7 and 10. An outline of results from both studies, for comparable age ranges, is given in Table 2.

TABLE 2
PERCENTAGES* OF CHINESE CHILDREN (6; 0-8; 7) AND SWEDISH CHILDREN (7-8)
DESCRIBING VARIOUS OBJECTS AS LIVING OR AS HAVING LIFE

Objects	Chinese		Swedish	
	"Living"	"Having life"	"Living"	"Having life"
Dog	100	100	94	92
Tree	37	26	88	75
Inanimate**	25	9	29	21

*Rounded to nearest whole number.

**Being the average of percentages relating to the following objects: moon, river, watch, automobile, bicycle, ball, pencil, stone.

It will be seen that, as far as the responses to the question "is it living?" are concerned, the results are remarkably similar, but with the interesting exception of the object "tree." Children from both cultures gave fewer positive answers to the question "has it life?", this trend being more pronounced with the Chinese.

Another way of expressing the degree of similarity can be arrived at by computing the rank correlation coefficients (ρ) of the percentages. These work out at .84 for "is it living?" and .68 for "has it life?" The major positional discrepancy is that of "river," to which in answer to both questions life was far more often attributed by the Swedish children.

5. *Manus Children of New Guinea*

a. *Mead* (19). These children were studied over a period of six months as part of a wider investigation of Manus culture. The methods, summarized by Mead herself, were as follows: (a) Observation of a group of children . . . in some ordinary social situation. (b) Collection of spontaneous

drawings. (c) Interpretation of ink blots. (d) Definite stimuli in the form of questions designed to provoke animistic responses.

The component elements of the last category have to be described in some more detail: (a) When a canoe had drifted from its moorings Mead said: "That canoe is bad, isn't it? It's drifting." (b) She hung up some Chinese glass chimes which tinkle in a breeze and claimed that it was a *ramus*, a property-getting charm. She presented these to the children with the words: "This is my *ramus*. It cries for native property. What do you think it is crying for now?" (c) She showed them a dancing doll operated by a string. (d) When a child had made a drawing which he considered bad Mead said: "This pencil is bad, isn't it? The pencil doesn't do good work." (e) She recorded children's spontaneous comments on the working of her typewriter. (f) She placed Japanese paper flowers in water and noted children's responses when they opened out.

According to Mead none of these different approaches provided any positive evidence for the occurrence of animistic thought, which she therefore regards as wholly culturally determined.

6. General Comments

The impression one gets from an examination of the material reviewed is, at first sight at least, the apparent absence of consistent trends. The incidence of animism reported ranges from extremely high figures down to zero, and such background factors as socio-economic status are sometimes said to produce highly significant differences, and sometimes none at all. Independent investigators working within the same tribe get widely differing results as emerge from Table 1.

The only striking exception is Klingberg's replication of Huang's work, in spite of the cultural divergence of the populations investigated.

C. THE RELEVANCE OF THESE FINDINGS TO PIAGET'S THEORETICAL POSITION AND HIS OBSERVATIONS ON METHODS

Many of the investigators whose results have been outlined claim to have confirmed or refuted the views of Piaget. Before discussing such claims it is necessary to sketch at least the broad lines of his theory of child animism.

Two different types are distinguished, and the first of these is *diffuse animism*, lasting until about the ages of four or five. "The child's thought begins with a lack of differentiation between living and inert bodies since it possesses no criterion by which to make the distinction" (22, p. 229). As long as this *indissociation* holds sway the child fails to distinguish between

action and purpose, fusing them in a primitive continuum. Animism is due to a special form of this indissociation "which consists in attributing to things, characteristics similar to those which the mind attributes to itself—such as consciousness, will, etc." (22, p. 237). After the age of about five, animism tends to crystallize into a set of more clearly defined beliefs, which Piaget terms *systematic animism*. These are no longer all-pervasive, and come to the surface spontaneously only when "chance phenomena which the child cannot understand by reason of their unexpectedness" are encountered (22, p. 213). Nevertheless the child does tacitly cling to many such beliefs, which can be elicited by special probing. At the same time Piaget appears to admit (22, p. 191) that the very act of focussing attention on some puzzling problem by means of questioning may call forth an animistic account produced *ad hoc*.

In accounting for systematic animism generally the principle of *introjection*³ is invoked. This is said to be the tendency "to situate in others or things the reciprocal feelings to those we experience from their contact" (22, p. 242), a tendency rooted in the egocentric belief that everything is relative to the self. Although indissociation and introjection have been introduced separately, this was done merely for the sake of clarity of exposition; in fact Piaget conceived them as interdependent aspects of immature mental functioning.

Piaget also discussed certain social factors which, he suggested, favour the persistence of animism. The first of these consists of the feelings of *participation* that originate in the early family situation and "*may*⁴ be finally transferred to the things themselves . . ." (22, p. 247). Second, the feelings of moral obligation produced by education are extended to cover the physical universe: "It is not because the child believes things to be alive that he regards them as obedient, but because he believes them to be obedient that he regards them as alive" (22, p. 248). Lastly language itself, through its quasi-animistic forms of expression fosters and channels, although it does not create, animism.

Naturally this condensed presentation does scant justice to the subtlety of Piaget's reasoning, yet it is believed that it introduces no fundamental distortion. In order to view Piaget's account of animism in proper perspective it is important to realize that it forms part of a much wider theoretical edifice, embracing the whole development of intellectual functioning in the child; thus early moral ideas and conceptions about physical phenomena are

³Not to be confused with the more common psycho-analytic usage of this term.

⁴Italics not in the original.

alike explained in terms of the same basic developmental trends as those that are said to underlie animism.

This is apt to be forgotten by critics, who usually try merely to substitute another hypothesis specifically designed with reference to animism. For instance Huang proposed to substitute the notion of "differentiation" for Piaget's "indissociation"; according to him "the process of differentiation should start from some neutral and indeterminate state which is neither animism nor physicalism, and then proceed by the gradual appearance and definition of both, rather than from one to the other" (9, p. 118). The trouble with this alternative formulation is that the "neutral and indeterminate state" is left completely undefined. It is hard to conceive what kind of neutrality in the child's relation to the outside world could be meant. The only plausible interpretation seems to be that the child reacts similarly to animated and inert objects; and this is of course precisely Piaget's point, to which Huang took exception.

Another critic, Klingberg, re-phrased Huang's view by stating that "growth goes from ignorance to better and better knowledge" (16, p. 236). This is certainly true, but is it more than a truism? Was all of Piaget's massive work necessary to reach this conclusion? The answer should clearly be in the negative; what Piaget attempted to do was to show that what had in the past been taken as mere ignorance was in fact a reflection, in a variety of related spheres, of the immature state of mental development of the child. Piaget repeatedly demonstrated that the mere imparting of the relevant knowledge was insufficient to alter the child's conceptions in the absence of the capacity to perform the requisite intellectual operations.⁵

One of the reservations put forward by Klingberg is, however, shared by Piaget: namely that animism can only be elicited by verbal means. This is of course the reason why he has turned to problems that can be tackled by an operational approach. But the study of verbal behaviour in its own right is not lacking in interest, and this is the spirit in which, for instance, Russell undertook his investigations. From this standpoint one can go on to ask what kind of empirical results are to be expected on the basis of Piaget's theory.

⁵This general principle has been concisely re-stated recently by Dr. Inhelder, Piaget's closest collaborator: "... we observe an inter-penetration of the pre-logical structures on the one hand with the animistic and realistic forms of childhood beliefs on the other hand. The appearance of the first structures of logical thought coincides with that of rational causality in the child. In our environment it seems that there is synchronism between these two processes" (30, p. 93). The last qualifying sentence relates to a statement by Mead to the effect that she had found no such correspondence.

The first thing to be noted is that he was dealing with mental functioning in general and, at least as far as the origin of animism is concerned, not in relation to any particular culture. Thus theoretically the earliest stage of animism should be universal in infancy; but as the child is incapable of adequate verbal communication at that stage this proposition is in principle unverifiable. When it comes to the factors favouring the *persistence* of animism, the position is somewhat different. Two of them, "participation" and the generalization of moral obligation, are very speculative. If they do operate, one would imagine the former to be universally effective, whilst the latter would depend upon the degree to which moral obligation is impressed upon the child from an early age. Finally language is clearly most important, and subject to a very wide range of cultural variation. From this it follows at once that cross-cultural uniformity of animistic responses at later ages, say after about five, cannot be anticipated on Piaget's own thesis.

Apart from these sources of variation, to what extent could one expect in other cultures patterns of responses similar to those obtained by Piaget with his own techniques in Switzerland and France? Before attempting to answer this question it is essential to clear up certain misunderstandings. For instance, it has already been mentioned that Havighurst and Neugarten were under the impression that Piaget's theory required 100 per cent animistic responses from the younger age groups, and that on the basis of one single question. It will therefore be useful to summarize some of Piaget's own statements on this matter—all page references are to (22).

There is no fully consistent age progression; development may fluctuate with regressions and jumps (p. 190); some children aged between five and six exhibit hardly any animism (p. 178), whilst much older ones may do so (p. 218).

Animism is not necessarily pervasive and uniform. A child will often claim that an object "knows," but does not "feel" (p. 172); furthermore direct contradictions may occur on one and the same occasion, consciousness being attributed to an object with subsequent denial (p. 189).

The kind of question asked may pre-determine the answer (p. 173). These and other difficulties led Piaget to utter the following warnings:

"... The greatest reservations must be made before drawing conclusions from the results" (p. 173).

"We should not dream of guaranteeing the soundness of the present technique as a means of individual diagnosis" (pp. 188-9).

In view of this plethora of cautionary remarks it would seem that only

two broad trends can be predicted on the basis of Piaget's theories, and employment of his techniques: (a) *Some* of the responses of younger children should be marked by animism. (b) The proportion of such responses should decline with increasing age.

In fact, all the investigations surveyed reported some animism, with the single exception of Mead's; and in most of them the decrease at later ages was also found.

D. MEAD'S STUDY OF MANUS CHILDREN

A single exception would of course be quite sufficient to invalidate a theory, and consequently this case needs careful scrutiny. One line of criticism of Mead's work has been developed in some detail by Dennis (4), who pointed out that she had not followed Piaget's methods and therefore could not expect the same results; in particular, she did not ask children whether any specific inanimate objects were alive, or could feel, know, etc. There is no doubt a good deal of weight in this objection, but in view of the fact that Mead did employ a variety of approaches one would nevertheless have expected some animism to emerge.

Further light can be shed on the problem by looking at the way Mead tried to account for the absence of animism in her findings. She did so in terms of three main factors held to be peculiar to Manus culture: first, the nature of the Manus language which is simple, containing hardly any metaphors or similes; second, an environment forcing children to make correct physical adjustments under circumstances in which failure would spell disaster; third, the fact that adults do not communicate their supernatural lore to children (19, p. 187).

These will now be examined in turn. The first factor is certainly most important. Piaget himself has discussed the influence of language on animistic beliefs, although he denies that they *originate* through language. Presumably he would be ready to concede that the scarcity of animistic elements in a language would tend to reduce the incidence of animism.

The second argument is more questionable, implying as it does that correct physical adjustment is dependent upon an understanding of cause and effect relationship *to the exclusion of non-naturalistic concepts*. There are numerous cultures, including according to Mead's own testimony the Manus, in which people are capable of perfectly adequate physical adjustment to their environment, whilst at the same time harbouring magical or other types of supernatural notions about various features of this environment.⁶

⁶This compatibility has been admirably expounded in Evans-Pritchard's classical study among the Azande (7).

The third point presupposes that child animism is or can be the result of the teaching of adult beliefs and cosmology. This is hardly consonant with Piaget's theory and in fact Mead herself had, a few pages earlier, explicitly excluded "strictly traditional behaviour."

What, then, would Mead have regarded as animism? Her answer, which contains the crux of the matter, is as follows: "... that a child spontaneously attributed personality to natural phenomena, animals or inanimate objects, or created non-existent personal beings" (19, p. 181). It will be evident that this goes far beyond Piaget's conception of animism, which requires merely the attribution of certain characteristics of living beings to inert objects. Mead was therefore operating with a different sort of model, so that her negative findings cannot be regarded as conclusive evidence against the assumption of universality implicit in Piaget's theory.

E. PROBABLE CAUSES OF DIVERGENCIES IN THE RESULTS OF CROSS-CULTURAL STUDIES

At the outset it is perhaps desirable to state that there is no reason to assume that the incidence of animism in different cultures should be uniform. Piaget makes allowance for environmental factors, and to the extent that these operate differences may be expected to occur. However, the conspicuous lack of agreement that has been demonstrated within one and the same culture is too great to be accounted for in this way. It rather points to the existence of extraneous influences, related to the type of approach selected in studying animism. The ones that can be gleaned from a scrutiny of the literature will be discussed here, whilst others are to be touched upon in a subsequent paper.

As a preliminary, some differences of a purely verbal nature may be briefly mentioned. These did not show up in the present survey, allowance having been made for them. Thus Lerner (18) discussed his findings under the heading of "immanent punishment," and Dennis (4) similarly under "moral realism." This probably stems from the fact that Piaget bracketed several of these concepts together with animism as characterizing the early egocentric stages of development.

1. *The Samples*

In some investigations the sample was rather too small for deriving any reliable numerical results (e.g., Dennis and Russell, 5). In other cases no information was given about the subjects apart from their ages (e.g., Huang and Lee, 11). Under these conditions any comparisons become very hazardous.

2. *Language*

Interviews with American Indian children were conducted in English by two investigators. Dennis (4) defends this on the ground that, "It is likely that most Hopi, when employing English, definitely translate from their native language." It is a somewhat doubtful assumption that, even if they do always translate, it will not affect the results. Havighurst and Neugarten made an effort to check this by giving their test first in English and about a month later in the vernacular to a selected group of subjects. The results indicate considerable disagreement.

"At Third Mesa there were nine agreements, four disagreements and one uncertain; at Topawa, nine agreements and eight disagreements" (8, p. 147).

Unfortunately conditions were such that it is not possible to decide whether the disagreements reflected the unreliability of their test, the effect of language, or a combination of both.

Given the likelihood that linguistic factors do enter into animism, it would seem to be safer that children should be questioned in their mother tongue.

3. *Type of Problem Presented*

a. Explanations of physical phenomena versus questions about objects. In studies where children were shown simple physical experiments and/or questioned about the causes of other physical phenomena (e.g., Deutsche, 6) the frequency of animistic responses was usually rather low. On the other hand, when children were asked about whether each of a series of objects was alive, substantial positive findings were consistently reported.⁷ In Piaget's own studies of children's conceptions of physical causality (23) the existence of animism is more often inferred than directly substantiated. Thus it could have been predicted on the basis of his own work that this kind of approach would yield fewer animistic responses.

b. Choice of objects. Where the latter of the two approaches referred to above is used, the kind of objects or names of objects selected as stimuli tends to vary widely. The implicit assumption sometimes appears to be that the exact nature of the object is of no great account, provided it is familiar. In fact there is some evidence that the kind of object presented may be an important variable. Klingensmith (17) found that his subjects were almost 10 times as ready to say that a clock or a candle are alive than they were to affirm the same about a match, dish, knife, or comb.

⁷It is true that these were not always interpreted as supporting Piaget, but that is another matter.

There is perhaps a case for the systematic sampling of objects along the lines suggested by Brunswik (3).

4. *Method of Administration*

a. *Formulation of questions.* Piaget himself was fully aware that the exact manner in which questions are worded may constitute a highly relevant variable. The manner in which he attempted to cope with this difficulty was by using a multiplicity of modes of presentation and generalizing on the basis of only those responses that remained stable. Others, with the laudable but possibly misguided aim of standardizing their procedure,⁸ adopted a single stereotyped mode of questioning. The potential pitfalls in this have recently been demonstrated in a carefully designed experiment by Nass (20). He presented two matched sets of children with a series of problems, the actual questions being preceded by "why" and "how" respectively. Differences between the answers obtained came out highly significant, the former eliciting between 4 and 37 times as many non-naturalistic responses.

b. *Oral versus written administration.* The only study from which the effect of this variable may be inferred is that of Russell (25, 26). It will be recalled that he used individual interviews with younger children and a written exercise with older ones. The two approaches did, however, overlap as regards the age ranges 8-13, and comparative results are presented in Table 3. In this case it clearly appears that the different methods adopted

TABLE 3
PER CENT OF CASES IN STAGE I OF ANIMISM ACCORDING TO METHODS OF ADMINISTRATION

Chronological age groups	Method used	
	Individual interviews*	Written group test**
6- 7	48	—
8- 9	43	0
10-11	40	0.5
12-13	29	1.1
14-15	—	0
16-17	—	—

*Arithmetical means of percentages relating to three samples given in Table 3, p. 358 of Russell (25).

**Directly taken from Table 4, p. 332 of Russell (26).

yielded incompatible figures: individual questioning produced a vastly higher proportion of Stage I animism than that obtained under conditions where the subjects had to write down their own answers. It would perhaps

⁸This stricture does not apply to Russell and Dennis (27, 28), who were clear about the implications and applied appropriate safeguards.

not be unreasonable to expect that this might be a general tendency, but it would of course have to be checked by further research.

5. *Personal Influence of the Investigator*

There is one other instance in the literature where both interviews and written tests were applied, namely in the work of Askar (2). This was not referred to above, as his results are widely out of step with what has been reported by other investigators; and unless one is prepared to assume that children in Birmingham are quite unlike their age-fellows elsewhere this leads to serious doubt concerning Askar's whole mode of approach. It is of particular interest to note in this connection that his written answers showed a far higher incidence of animism than the interview responses, i.e., the opposite of Russell. Now it may be pertinent to observe here that Askar, unlike Russell,⁹ seems to have been disposed to pre-judge the issue; at any rate he expressed a strongly negative attitude towards Piaget's theories throughout his report. Without suggesting that there was any deliberate attempt to influence the children either way, there is the possibility that his attitude may have had an effect on the interview results; this impression is confirmed by the fact that he tried, somewhat ingenuously, to account for the discrepancies by explaining that the interviews provided more opportunity for "discussion and clarification."

Whatever the truth of the matter may be in this particular instance, there is certainly a danger here that has to be guarded against. As Isaacs acutely commented (14, p. 95), the adult is an authority figure *vis-a-vis* the child; hence an existing bias may communicate itself imperceptibly, leading to a corresponding slant in the replies. This dominance of the adult is particularly marked in cross-cultural situations where a white investigator faces an indigenous child. Such a factor may be responsible for the astonishingly high proportion of animistic responses sometimes reported, especially with American Indian children.

F. SUMMARY AND CONCLUSION

A survey of the literature dealing with cross-cultural studies of animism disclosed what at first appears as a tangle of inconsistent findings. In order to evaluate these, the central tenets of Piaget's theory were outlined, to-

⁹Professor Russell's own position, which he kindly set out in a personal communication, was as follows: he began with complete scepticism about Piaget's claims, but had to modify his views after spending some time in an infant school where he found that many of the children responded in the way Piaget had described. This led him to undertake the carefully controlled developmental studies already cited.

gether with his warning and qualifications concerning empirical results. From this it was deduced that only two general predictions can be made about the results which, according to his theory, ought to be found universally: (a) Some of the responses of younger children should be marked by animism; (b) the proportion of such responses should decline with increasing age.

Examination of the studies in the light of these considerations showed that most of them reported results, which, in spite of their diversity, did in fact conform to these minimum requirements. An attempt was also made to demonstrate that the completely negative findings of Mead, the only ones of this kind, were actually the consequence of a misunderstanding of Piaget's concept of animism.

Lastly the great differences in the quantitative estimates of the incidence of animism, even within one and the same culture, were discussed. It may be suggested that one is faced in this sphere¹⁰ with an inherent and inescapable relativity of all findings: numerical frequencies are necessarily a function of the particular method of assessment employed; and cross-cultural standardization is likely to be no more successful than in the case of intelligence tests.

It would thus be idle to hope for a great deal of quantitative uniformity.¹¹ On the other hand some of the major extraneous sources of variation can be identified, and these have been reviewed. It follows that the range of variation could probably be considerably reduced, although never eliminated, by systematic research on cross-cultural samples of adequate representativeness and size, designed to isolate the quantitative effects of different methods and conditions of testing for animism.

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¹⁰The same applies to "immanent justice" (cf. Jahoda, 15).

¹¹Isaacs has recently put this in a pithy manner: "(Piaget's) findings are both *too elementary* and *too fundamental* for refined controls. . . . The actual ages of manifestation are secondary; the sequence is all" (13, p. 26).

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CHILD ANIMISM: II. A STUDY IN WEST AFRICA*

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A. INTRODUCTION

When this investigation was originally planned, the aim had been to assess the frequency of animistic thought at various age levels among school children in Ghana. An intensive preparatory scrutiny of the relevant literature forced the writer to the conclusion, set out in a previous article (5), that such an aim would be unrealistic. Hence the more modest object of this report is to bring out some of the complexities of such a task.

Two broad lines of approach were adopted. One was essentially a replication of Havighurst and Neugarten's (3) study of American Indian children. The other represented a new departure, suggested by the childhood reminiscences of several adult African informants. Most of these were students, all of high intelligence and capable of critical detachment. When discussing conceptions of physical causality they had held as children, some of them volunteered without prompting the information that they had believed in the presence of living beings, who produced the sound, inside a gramophone; and as far as they were able to recall, this idea had not been suggested to them by anyone. As this seemed to hold the promise of a potentially fruitful direction of inquiry, it was included in the present investigation.

It may of course be maintained that such a belief in a living being *inside* a mechanical object does not correspond strictly to Piaget's conception of animism, whereby the insert object itself would have to be credited with some of the attributes of a living being; it may even be held that some of the very objections the present writer levelled against Mead's study would apply in this case. There is no doubt some justification in such a view, in the sense that belief in a living being inside an object goes beyond Piaget's conception of animism.¹ However, a gramophone is really a rather special kind of object, inasmuch as it does actually possess an attribute usually associated with animals and human beings: namely the capacity to produce sounds other than noise. The tendency to extend this by regarding the in-

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¹On the other hand he did occasionally quote instances of this kind, e.g., the child who thought that God was inside the sun (7, p. 271).

strument as in some more or less obscure way connected with a living being can surely be regarded as animism in the spirit, if not exactly according to the letter, of Piaget's theory.

There is a further reason why the choice of the gramophone offers substantial advantages. With nearly all other inanimate objects it would have been necessary to ask specifically whether they are "alive," can "know," and so on. But this would have the drawback of eliciting, in Piaget's own words ". . . not animism as it actually functions, but definitions of the words 'living,' 'knowing,' 'feeling,' etc." (7, p. 229). On the other hand, non-directive questioning about the gramophone enabled the child to formulate its own conceptions, animistic (as they will henceforth be called without further apology) or otherwise.

B. THE SAMPLE

Subjects were drawn from six Accra schools, chosen as containing a fairly satisfactory cross-section of the total Primary and Middle School population in the city. The sample consisted of 60 boys and 60 girls obtained from the class registers by means of a table of random numbers. In order to minimize any risk of contamination of the results through discussion of their responses, subjects were taken in sets of three from each of the six forms at the Primary (P1-P6), and the four forms at the Middle School (M1-M4) level, these sets being distributed over the schools.

It may be mentioned at this point that no significant sex differences were encountered in any part of the study, so that further reference to this factor is unnecessary.

In the absence of universally compulsory registration of births it was not possible to ascertain ages with any accuracy. All that can be said is that the total range for the sample is about 6-18 and that there is an approximate age progression, not without a good deal of overlapping, throughout the various stages of schooling. The least objectionable procedure therefore appeared to be the presentation of data by successive pairs of forms, i.e., P1-P2, P3-P4 . . . M3-M4.

As regards social background, just over one-third of the families were polygamous. In about one-fifth of the cases both parents were totally illiterate, the remainder being evenly divided between those where only the father was literate, and those where both parents had enjoyed at least some schooling. From what is known about the social characteristics of the Accra population,² it is clear that the school children's families do not contribute

²The information is scanty and not very reliable. For sources cf. (10 and 11).

a fully representative sample of the population at large: they are considerably biased in the direction of the higher educational and occupational strata.

C. PROCEDURES

For the first part of the inquiry a story devised by Piaget and subsequently modified by Havighurst and Neugarten was used. The form devised by the latter, together with their standard series of questions, was taken over after a slight adaptation to make it more suitable for the African milieu. Here it is:

This is a story about two boys. These two boys, named Kofi and Kwame, were out walking and came to a place where a woman was selling oranges. Each of them stole an orange and ran off with it. But the seller saw them and ran after them. She caught Kofi and punished him, but Kwame got away. The same afternoon Kwame was chopping wood, and the cutlass slipped and caught his foot.

*Question A.*³ Why do you think Kwame's foot was cut?

*Question B.*³ If Kwame did not steal the orange, would he cut his foot?

Question C. Did the cutlass know he stole the orange?

The second part of the inquiry was separated from the first by other activities. In introducing it children were asked whether they knew what a grammophone is, and whether they had ever seen and heard one. As grammophones are extremely popular, especially in the towns, this was mainly a formal safeguard. In fact, with the single exception of one of the youngest girls, all were familiar with grammophones. Then came the operative question: "Can you explain to me where the music and songs come from in a grammophone?"

Preliminary trials were conducted by the writer, but the interviewing of the actual sample was undertaken by an African student skilled in fieldwork methods.⁴ The vernacular was used in the individual interviews, and children were encouraged to express themselves freely and exhaustively. In the case of the grammophone, neutral probing was sometimes followed by loaded questions, as a means of "testing the limits."

D. RESULTS

1. *The Story About the Cutlass*

Answers to Question C were classified as animistic only when the subject explicitly affirmed that the cutlass knew about the theft. On being further

³The first two questions were designed to investigate the notion of immanent justice. This aspect has been reported elsewhere (4) and will therefore not be considered further.

⁴The writer is greatly indebted to Mr. C. E. Fiscian for carrying out this work.

pressed about their responses, such children were apt to invent myths in the manner observed by Piaget (8, p. 256). Two examples are given below:

The cutlass knew that Kwame had stolen the orange, and that is why it cut his foot.

[How did it know?]

Because it saw the orange.

The cutlass knew that Kwame had stolen the orange, because it saw him when he was stealing it.

[Where was the cutlass when Kwame was stealing the orange?]

In the house.

[How did it know then?]

Because it followed him.

A total of 15 subjects gave animistic responses to this question, their age-distribution being shown in the column headed "Cutlass Animism" of Table 1. The frequency, relatively low even among the younger age groups, declined regularly in accordance with Piaget's postulates.

TABLE 1
PERCENTAGES OF ANIMISTIC RESPONSES

School grades	"Cutlass animism"	"Grammophone animism"	Both types combined*
P1 and P2	38	25	54
P3 and P4	17	8	25
P5 and P6	4	—	4
M1 and M2	4	4	4
M3 and M4	—	—	—

*Owing to a limited overlap, percentages in the last row are not always equal to the sum of the other two.

2. *The Explanation of the Grammophone*

As was to be expected from children with limited education, especially in the scientific and technical sphere, no one was able to give a fully adequate account of the functioning of a grammophone in physical terms. A majority of subjects of all ages correctly identified the "plate" (a term commonly used for records) as being the source of the music; older children tended to bring in various parts of the instrument in a purely descriptive manner. Most subjects stated that the music had been incorporated into the "plate" at the time when it was manufactured. They seemed to take this fact for granted as part and parcel of European technical skill, without any sense of mystery or even curiosity.

Two representative protocols will be quoted to illustrate these observations, the first from a P1 and the second from an M2 subject:

From the grammophone plate.

[What is inside the plate?]

The songs have been written into the plate, and so when we play it we hear the songs.

[How was this done?]

It was written into it by the European who made the plate.

From the plate.

[How?]

When the nail (i.e., the needle) is put on the plate the music starts and we hear it.

[What part of the plate produces the music?]

The lines on it.

[Do the lines contain the music?]

No. When the plate is made, the music is put in, and when it is played we start hearing it.

Others offered more fanciful accounts on being pressed, and these seem to have been made up on the spur of the moment:

It comes from where we stick the pin.

[What makes the music?]

Some people sing, and the song sticks in the (spring?), and this song passes through the pin and then we hear it.

I don't know.

[Is there somebody inside who sings?]

No.

[Then where does the music come from?]

[Pause.] From the electric light.

The last response illustrates an important fact encountered repeatedly: even children who did not have the faintest idea of the mechanics or the manipulations involved, firmly resisted animistic suggestions; "there is no human being there," "nothing is inside," "nobody is singing in it" were some of the answers. There was not a single case of an animistic response being successfully induced by leading questions. Nearly all spontaneous animism appeared right at the beginning or shortly afterwards. Again two examples will be given:

There is something like a dog drawn on it,⁵ so when you put the nail on the dog sings through the nail and we hear it.

It comes from the inside.

[Which part?]

The middle.

[How do we hear the music?]

⁵A well-known trade-mark.

There is a certain human being inside the grammophone and he does the singing.

Altogether there were only nine subjects who gave such clear-cut animistic responses, and these were again concentrated in the lowest age groups, as is apparent from Table 1.

E. DISCUSSION OF CULTURAL VARIABLES

In considering the implications of these results, it is necessary to ask at the outset whether the animism that came to light could be accounted for in terms of direct social learning. If this were possible, it would of course mean that the findings could not be regarded as providing confirmation of Piaget's theories.

One problem arises mainly in connection with the cutlass, as the grammophone is altogether outside the orbit of traditional life. The indigenous religion, to which a majority of the population still adhere, and many of whose beliefs continue to be held even by people who are at least nominally Christians, has long had the label of "Animism." Although this designation survives in official publications,⁶ it is in fact grossly misleading and reflects a misunderstanding of the nature of traditional religious beliefs. No detailed discussion of these can be attempted here, and they are in any case available elsewhere.⁷ A few pertinent comments are, however, indispensable. It is true that traditional religious cults attach a special significance to various inanimate "fetish" objects, and one of the first actions required of the Christian convert is that he should discard these. Similarly, use is made of a multitude of different objects for the purpose of performing magical operations: but neither involves any conception of such objects as "living and endowed with will." "Fetish" objects are merely regarded as the temporary abode of some spiritual being, whilst magical objects are purely impersonal instruments for the purpose of commanding magical powers. A cutlass for ordinary household use would not normally fall into either of these categories, and the possibility of animistic beliefs related thereto being socially acquired may be safely discounted.

There is, however, a more subtle aspect of this matter requiring at least passing mention, as it does not seem to have been previously noted. Certain common objects may have two different names in some West African languages, according to the context in which they occur. One would refer to

⁶Cf. the 1948 Census enumeration of religions (11, p. 38).

⁷Cf. Danquah (1); Field (2); Parrinder (6); Rattray (9).

its everyday form as people know it, the other when it is part of a traditional story or myth, when it may be endowed with properties characteristic of a living being. For instance, the ordinary word for a stone in *Ga* is *te*; but in relating a myth about a stone with a beard which helped people to find their way in the bush by pointing its beard in the direction of the path they had to follow, the "strong" word *Sigmeenii* would be used. It is important to keep this in mind before embarking on any investigation of animism in the vernacular, or the results may be completely fallacious. The word for cutlass (*klante*) has no "strong" form, and one may therefore feel confident that the animistic responses corresponded to modes of thinking and not conventional linguistic usage.

It may be of some interest to compare the incidence of "cutlass animism" with the findings reported by Havighurst and Neugarten (3); it will be recalled that the method used in the present study was modelled on theirs. If one dichotomizes the African age groups so that they correspond roughly to the division of the American Indians (i.e., 6-11 and 12-18), the respective percentages are as follows: for the African sample, 27 and 3 per cent; the range among children from American Indian tribes, 53-90 per cent and 25-82 per cent. These results diverge so widely that there is not even an overlap, and it is very doubtful whether the contrast represents genuine differences in the populations studied. One would have to assume that American Indian school children are several times more animistic than West African ones, in the absence of any independent evidence warranting any such assumption. It seems more likely to the present writer, although it must be admitted that this is somewhat speculative, that some of the factors analyzed in the previous article (5) may have operated so as to inflate the American Indian figures. Some support is lent to this line of argument by the fact that it was possible to demonstrate conclusively the occurrence of such an inflation in the incidence of immanent justice, as reported by Havighurst and Neugarten for these same American Indian tribes (4).

The grammophone raises an entirely different question, namely the way in which the products of western technology are usually regarded. This can be answered quite categorically by saying that they are never conceived by adults in a manner that could be called animistic; even the term "magical" is of doubtful applicability, although it is frequently believed that magical powers entered into their design and construction. There was one remarkable instance where different kinds of notions were mixed up in a very curious fashion:

People sing in Europe, and this passes through the telegraph to Accra, and then it sings.

[Which part of the grammophone sings?]

The inside.

[What is there?]

I have been told by my father that Europeans go far into the bush and cut off people's heads and put them inside the grammophone, and these heads sing the songs that we hear.

This was an isolated case, and even here the disembodied heads were viewed as quasi-mechanical, capable of singing only because of European magical power; it was of course not counted as an animistic response. In a few other protocols adult magical beliefs came out in their more common and unspectacular form, as in the following example:

Somebody will sing into the plate. There is some medicine. When the fellow finishes singing and you put this medicine on the plate, then the song remains in the plate forever; so whenever you play the grammophone, the song comes out again.

The crisp matter-of-factness of these responses was in definite contrast with the more vague and diffuse quality of the animistic ones. But the latter were not uniform: in about half the cases they came out readily, indicating that the child had probably entertained an animistic notion about the grammophone before the interview situation; for the remainder it was as if, in his search for an explanation of a phenomenon hitherto accepted unreflectively, the child were grasping at an animistic straw. One subject was in a transition stage; she began with an animistic account, only to repudiate it shortly afterwards.⁸

What emerges from this discussion is that the factors determining the responses to the grammophone questions were exceedingly complex. Nevertheless, it is believed that the direct influence of adult ideas was capable of being detected, and that cases where such influences operated were in fact eliminated. The residue consists then of responses which are the product of animistic thought.

Turning now to a consideration of the results as a whole, it may be noted that these are in accordance with the conclusion arrived at in the previous article (5) concerning the relativity of numerical findings. Table 1 contains the percentage distribution of the grand total of 24 animistic responses obtained. Out of these 15 related to the cutlass and 9 to the grammophone. Only three children gave animistic replies in both parts of the inquiry. In

⁸Her answer was also reckoned non-animistic.

other words, there was no significant association between the animistic responses elicited by these different approaches; depending upon one's criterion, the frequency of animism could therefore be said to range from 25 to 54 per cent in the lowest age groups.

It should perhaps be emphasized in conclusion that this variability is entirely consistent with Piaget's theoretical model. For he does not claim that there is any absolute level of animism irrespective of the sampling of populations and objects; he only maintains the existence of a developmental sequence, and the results of the present investigation satisfy this basic requirement.

F. SUMMARY

1. A sample of 120 African school children in Accra were interviewed in the vernacular. Two different types of approach were used: (a) the slightly adapted version of a story previously applied to American Indians, which was standardized and culminated in the question whether a cutlass can "know" something; (b) a more flexible technique requiring the children to explain how a grammophone works.

2. The over-all incidence of animism was low in comparison with findings reported from other semi-literate societies. There was no significant association between the animistic responses yielded by methods (a) and (b). But for both the resulting pattern was one of progressive decline in animism with increasing age, in conformity with what would be expected according to Piaget's theory.

3. Some of the more subtle cultural factors influencing responses were discussed at some length. These included traditional religious beliefs, magical ideas and attitudes towards the products of western technology; a peculiarity of West African languages was also described, which may be a pitfall for students of animism in that culture.

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SOME RESULTS OF AN ENQUIRY INTO THE INFLUENCE OF
CHILD-TRAINING PRACTICES ON THE DEVELOPMENT
OF PERSONALITY IN A BACONGO SOCIETY
(BELGIAN CONGO)*

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A. INTRODUCTION

The research work, which we have had occasion to carry out, pertains to the field of study of the process of socialisation and development of the personality as it occurs within a given society.

These studies have been carried out during a period of nine months in the village of Kimuenza on a group of Bantandu, a Bacongo tribe of the South-western portion of the Belgian Congo. We have limited ourselves in the present study to problems concerning children up to the age of about five years.

The method employed was that currently called "participant observation," completed by an interview. The observer was able to communicate with the subjects studied in their own language.

The collection and analysis of a large number of data pertaining to the total process of socialisation has permitted us to discover certain fundamental aspects of the educational process in the group studied. In the mass of data which we obtained, and which we cannot describe in detail here, those concerning the methods of discipline and their effects on the development of personality appear to us to be of fundamental importance.

B. FORMATION OF CHARACTER AND CONSCIENCE

The principal question is the following: What are the circumstances of life which influence the formation of character and especially the formation of conscience in the case of the African child?

A number of points will be cited which appear to be most important in this domain:

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1. *Up to the Age of Weaning the Child is Treated by Adults With Almost Complete Indulgence*

As one woman stated it in the course of one of our conversations: "When the child wants to look, it looks, when it wants to sleep, it sleeps, when it wants the breast, it takes the breast." These words typically state the theme according to which behaviour is organised for a prolonged period.

At the moment of weaning, the limitations imposed by exterior forces will reveal themselves drastically but apart from the frustrations which are engendered by weaning, the repertoire of obligations and prohibitions remains restricted.

This attitude can be partly explained by the relative simplicity of the milieu which contains few objects of value which the child can spoil. But this appears to be a secondary factor. There exists in fact a conscious and deliberate attitude of indulgence towards the child in whom one recognises a will of its own which one wants to respect. On the other hand, one considers the child incapable of doing wrong because, one says, its intelligence has not yet developed. The mother, moreover, is keenly conscious of the weakness of the little being which she must protect at all costs. "Protect" means to her to be constantly on the watch, to adapt herself as perfectly as possible to the child's needs. Hence the attitude of total indulgence is the expression of a particularly keen consciousness of her obligation to protect the child, which expresses itself in the general direction of passive adaptation.

2. *Is the Child Never Checked?*

It is, but only as a reaction against grave faults which may show themselves in the child, such as theft, doing harm, total disobedience, or excessive egoism. Here already two important characteristics reveal themselves clearly: (a) There is some moral training in so far as correction after highly undesirable behaviour is concerned. One has, moreover, recourse to the employment of proverbs, exhortations or incentives on the part of the parents during events in which they are not the interested parties but which may serve as an occasion for training the child. This will generally occur during get-togethers or other events in the life of the adults with which the children are precociously acquainted. (b) The faults which one combats are chiefly exterior faults which could occasion grave embarrassment to the clan. Summarising this, one could say that punishment or censure is directed towards: every act which could cause embarrassment or annoyance to the clan (theft, doing injury, etc.); every act which could dishonour the name of the clan—the punishment is the more serious when others in the immediate milieu get to know about what has happened; everything which, though not

causing immediate difficulties, could give rise to annoyance if the same acts were repeated at some other time or place—he who steals at home may steal at a neighbour's, etc.

What is involved, therefore, is the preservation of the honour, and above all, of the very life of the clan and not the development of a personal and positive ideal.

This social orientation of the educative process is preponderant and explains a number of typical qualities in the realm of character development.

Thus, one never punishes children except those of one's own kin. Intervention depends, furthermore, very largely, on the social repercussion of a given act, not on the objective morality of the act as such. Punishment will be light or negligible when the social environment has not learned about the offence or when a third party has not been hurt. On the other hand, the same act will provoke intense reprobation if it is generally talked about or leads to a "palaver."

There are, however, certain educational principles of a more positive nature: "One must not steal, one must not continually go and eat at other people's places." But the motivation which is constantly being given to the child always gets back to the same principle: not to cause annoyance, in order that one may remain safe.

One rarely punishes the child in the presence of a stranger. This would be a sign of disrespect towards the latter. Here again social prestige prevails over an educational need.

As to the methods of discipline, one can mention: physical punishment (beating the child), deprivation of food, appeal to the spirits. This appeal to supernatural forces proves generally effective because the fear of "ndoki" and spirits in general is very real amongst adults as well.

Let us add that a considerable amount of character formation occurs because of the fact that, when still very young (from the moment of weaning), the child is left to itself and, in practice, joins a group of friends of its own age. It is there that, by force of circumstances, it will find itself obliged to rid itself of a number of faults if it wants to maintain its place in the group. In brief: considerable freedom, intervention by adults to the extent that gross faults make their appearance which could cause trouble for the clan, character formation through contact with children of the same age.

3. *In Which Direction Does Conscience Develop Under These Circumstances During the First Years of Life?*

We know that the origin of the formation of conscience depends on the internalising of judgments of value on the basis of identification with parents

(or some substitute for them). Hence we can ask: (a) Are the necessary conditions for the organisation of the super-ego present? (This is a question of structure and function.) (b) What values are internalised? (This is a question of content.)

Concerning the former, Bateson (1) states that: "For the establishment of an organized and more or less personified super-ego, such as we are familiar with in Western cultures: (a) the inculcation of cultural norms must be predominantly reinforced by punishment (including threats of withheld affection under this term); (b) the punishing rôle must be played by some individual adult (a parent or parent substitute); and (c) the behavior of this punishing parent must be such that some species of close affective tie is established between the child and the parent."

Carothers (2) considers that these last two conditions are not often fulfilled in the case of the African infant. We must, moreover, draw attention, for the group which we have studied, to the fewness of punishments and to the inconsistency which characterises the attitude of adults in this matter; inconsistency in action taken—freedom and general indulgence with exhibitions of anger when tension becomes too strong, anger followed immediately by the opposite reaction; when the discharge of anger has run its course the mother cajoles and consoles the child which she has just punished—but especially inconsistency in the situations which call for action. As we have already mentioned reproof occurs when an act causes annoyance. It is greeted with silence on other occasions.

Hence a partially warped character-structure develops which leads to judgments concerning the morality of an act not in terms of objective principles of right and wrong but in terms of the social repercussions of the act.

Concerning the latter above, the internalised values are therefore purely social values and not a collection of precepts and prohibitions forming a coherent value system but a number of rules which aim at social integration. Hence the infringement of a rule will be perceived as a failure to observe social duties and, in the final instance, as a contravention of the will of others either living or dead. This contravention of the will of others must be avoided at all costs as it is a potential source of disagreeable consequences.

As the child grows up and he absorbs more and more of the different elements which form his real milieu, he will learn that the important thing in his life is to be safe. From various aspects of the behaviour of adults, the child, which is present at everything they do, will realise that although it can rely completely on its own people, it finds itself face to face with a

"world" which is by contrast peopled by obscure powers and which, to some extent, is potentially hostile and harmful.

One must therefore try to avoid everything which could possibly attract misfortune and if, despite everything, such misfortune should come about, it should not give rise to sentiments of guilt; rather should one search, for years if necessary, what hostile power has been at work. (Predominance of the effect of fear of others on sentiments of guilt.)

The few data on the disciplinary system which we have just described throw light on the specific nature of the development of personality in the group which we have studied.

In order better to grasp the direction of this development, it may be useful to delineate some characteristic features of pre-primary Western education. In trying to abstract from this education its most fundamental orientation, one is struck by precocious awakening and sustained stimulation of the personality.

Relations within the immediate family group (father, mother, and children) engender intense affective ties between a small number of persons. The establishment of these ties contributes to the formation of a heightened consciousness of self. (The child is "recognised" across these bonds.) This consciousness of self is accentuated in the course of later development, by virtue of extensive collection of educational techniques. It appears that these conditions contribute to the development in the European child of the image of an ideal self in which the accent is placed especially on individual performance and excellence of achievement.

This system of motivation is currently used by educators in order to obtain certain desired behaviour or in order to suppress behaviour that is not wanted, and this technique proves efficient in a large number of instances. From the moment that conduct makes its appearances in the child which is incompatible with the internalised system that has been established, the phenomenon of guilt can be observed. In the opposite case, sentiments of personal worth or of power develop.

These techniques do not exist in the group which we have studied. As one of our informants put it: "We do not insist that a child should grow up; we wait until, according to the order of nature itself, the child arrives at conduct normal for its age." The Congo mother does not use techniques in which an appeal is made to the child to help in the house or to look after a young child in order that he should obtain a feeling of his own importance and of his potentialities. When she asks the child to help she does so in

all sincerity. She really does entrust to the little girl of four years the care of a baby, not in order to show her that she has become a big girl capable of helping, but simply because it is the normal thing for a girl to render such services at that age. There is no question here of a type of game in aid of education

By the same token, rewards are extremely rare. One does not give material rewards, because it is normal that a child should render services, and a verbal reward ("how nicely you have done that, I see you are already a big girl, etc.") does not exist either. These encouragements are an indication that one consciously guides a child towards a defined and personal ideal. Guidance in the group which we have studied is different and mainly directed towards service of society and towards the rôle which everyone must play, both his actual rôle according to the capacities of a given age or one's future rôle. Thus one may say to the little girl: "You must do this and that, wash up, sweep, help in the preparation of meals, because when you are married that is what your husband will expect of you." It is important to grasp the climate of these exhortations. The words are not intended to make the child proud of his accomplishments or to raise his aspiration level. Not at all. The rôle of the women is such and such—well then, one must simply conform to it. It is typical that, in fact, children do not show themselves proud of a service they have rendered and do not attract the attention of adults to the fact that they have succeeded in achieving some purpose or other. It is interesting to note, by contrast, that we have often noted such attitudes in the children of Westernised Africans (*évolués*) who regularly use Western educational techniques.

We can therefore conclude that in the group which we have studied the development of personality proceeds along different lines when compared with the development of personality in Western culture.

C. COMPARISON WITH WESTERN CULTURE

In the Western group

1. Search for individual values.
2. Conscious and detached educational techniques.
3. Appeal to a personal aspiration level.
4. Encouragement of the wish to grow up.
5. Encouragement of the unique and the exceptional.

In the African group

- Search for social values.
- Realistic techniques, participation in real-life tasks.
- Appeal to a social duty.
- Certainty that nature looks after normal growth.
- Encouragement of the normal.

6. Personality traits: intense affective ties within a constricted group; heightened level of consciousness of self; sense of responsibility and regular occurrence of feelings of guilt; exhortation of the feeling of independence; spirit of individualism. Affective relations of low intensity with a large number of persons; relatively weak consciousness of self; preponderance of fear of others over sense of guilt; intense feeling of dependence; collective spirit.

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CHILDREN'S EARLIEST CONCEPTIONS OF ECONOMIC RELATIONSHIPS (AUSTRALIA)*

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A. INTRODUCTION

With few exceptions, psychological investigations specifically concerned with concept formation in children have shown a marked preference for the study of concepts about the physical world rather than the social world. Thus, for example, we have many detailed studies on children's conceptions of physical causality but practically none on their conceptions of social causality. This trend is particularly marked in the most active school of work in this field, that of Piaget. The very numerous excellent studies on the child's conception of number, space, time, etc., are hardly matched by the single study on *The Moral Judgement of the Child* (4).

One result of this trend has been the tendency to base theories on conceptual development entirely on the results of investigations of the child's thinking about the *physical* world. Piaget's highly developed theoretical system is a good example of this, in that the conception of the physical world is implicitly taken as the model for *all* of the child's thinking. Thus, in *The Psychology of Intelligence* Piaget implies (5, p. 47) that the "grouping," a theoretical model elaborated entirely in connection with physical concepts, is also applicable to concepts of value involving means and ends.

The danger in this trend is that the development of social concepts may be fitted into a theoretical strait-jacket. It seems essential that data be obtained on the growth of these concepts and that they be analysed so as to reveal the process of development that is peculiar to them. It is possible that the development of social concepts may follow paths of its own that may not fit in with the theoretical model elaborated in connection with physical concepts.

In the present investigation and in a previous study (1), an attempt has been made to investigate the development of social concepts in two important areas, that of kinship relations and that of economic relations between people. It has been possible to analyse the common features of conceptual development in the two cases and to produce a tentative description of certain general features of the developmental stages in the early growth of social concepts.

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Having regard to the verbal nature of the concepts to be dealt with, the most suitable method for our purpose appeared to be the interview method, akin to what Piaget calls his "clinical" method. This involves the systematic questioning of the child so as to reveal his concepts in the area under investigation. Certain methodological problems have been raised in a previous publication (1).

B. PROCEDURE

The investigation was divided into three parts. In the first part the child was questioned about the meaning of rich and poor, in the second part about the uses of money, and in the third part about the position of the "boss" at work. In each case a number of standard questions were asked, supplemented by one or more subsidiary questions, if it was necessary to clarify the child's response.

The standard questions used were the following:—

1. What is rich?
2. What is poor?
3. How do people get rich?
4. Why are some people rich and some poor?
5. Why do we have to give money when we buy things in a shop?
6. What does the man in the shop do with the money he gets?
7. Where does money come from?
8. What is a boss?
9. Where does the boss get his money?
10. How does a boss become a boss?

After each standard question one or more supplementary questions might be asked which would depend on the reply which the child had given to the standard question.

The investigation was conducted with 41 Australian children (20 boys and 21 girls) divided into two age groups, one of eight-year-olds and one of children between five and seven. This age break-up was used in view of the evidence presented in a number of studies by Piaget, that a fundamental change occurs in children's thinking at this point. The children all attended the same school in Melbourne. About 70 per cent of their fathers were manual workers, about 20 per cent were in white collar or professional occupations, and about 10 per cent were small entrepreneurs.

C. RESULTS

1. *Rich and Poor*

Question: What is rich/poor? The replies to these introductory questions showed only two stages. In the first stage the child had no idea of

the meaning of the words and either says he doesn't know or says the first thing that occurs to him. In the second stage the reply is in terms of possession of money or the lack of it.

Question: How do people get rich? Three types of reply could be distinguished. In the first type, found mainly among young children, phantastic methods are mentioned such as stealing, digging up gold, or getting money from God. In the second type rich people are thought to get their money by working for it. In the third type of reply, which was found only in the eight-year-old group, other methods of getting rich are mentioned, which seem to involve an embryonic notion of capital accumulation. Here we get references to saving, to money left by relatives, to selling things for money, etc.

Question: Why are some people rich and some poor? The types of reply obtained for this question correspond to those obtained for the previous questions. Apart from phantastic replies we get replies that relate to the status of rich and poor to the amount of work performed. The children at this stage maintain that the harder one works the richer one gets, the poor don't work hard enough or don't work at all. Finally there was a type of reply, corresponding to the third type for the previous question, where poverty is explained in terms of the lack of capital. This was in turn put down to a variety of causes, a failure to save, not being left any money by relatives, not enough things to sell, etc. This type of response occurred only among the older children.

For the last two questions a statistical comparison was made of the frequency of the three types of reply for the eight-year-old group, and for the age group five to seven. This yielded a χ^2 value of 12.10, which is highly significant.

2. Money

Question: Why do we have to give money when we buy things in a shop? Most children responded to this question in terms of a moral imperative, sometimes backed up by a threat of jail, if one failed to live up to it.

Examples: You'll be put in jail, because that's stealing without paying the money.—"You might be put in jail, that means because you steal things."—"You have to pay for everything you get."—"You have to pay things."—"You have to pay for everything you get. You should pay for things."

By contrast with this, some of the eight-year-olds responded in terms of purely rational economic considerations.

Examples: "Because they have to buy other materials for the clothes" (meaning the people who sell clothes).—"So the people (in the shop) can

get more things to sell."—"Because the factories have to work to make the food and the shopkeeper has to pay for it."

Thirdly, there was a transitional stage in the responses of some children whose replies were a mixture of moral and economic considerations.

Examples: "You got to pay them because they got to grow them" (foodstuffs).—"It's hard work to make them and you have to pay for them."

Question: *What does the man in the shop do with the money he gets?*

The replies to this question fall into three types, corresponding to the responses to the previous question. In the most primitive type of reply, when the act of purchase is governed by purely moral considerations and the economic functions of money are not grasped at all, money plays a purely ritual rôle in buying and selling. The act of giving change is interpreted by the child as an exchange of money between the buyer and seller which accompanies the act of purchase, but is without intrinsic connection to it. The handing over of money is therefore a morally enjoined ritual, not an action with any rational, economic significance.

Example I: "He gives the money to you, you pay him and he gives you some money back."—Does he keep any of the money?—"No."

Example II: "Puts it in the till."—What happens to it then?—"When someone gives money he gets change from it" (the till).—Does the money in the till ever get more?—"No."—Does the shopkeeper ever use any of the money himself?—"No."

Example III: "Puts it in a big drawer."—Does it stay in the big drawer all the time?—"No."—Why not?—"When people give him some money they pay him and he gives them some money back."—Why does he give them some money back?—"Because they give him some money and he has to give them some back."

Secondly, a transitional type of reply was obtained where money is put to some use other than the giving of change in the act of purchase. The shopkeeper may take the money home, he may put it in the bank, give it to sick children, etc., but he does not use it to purchase more goods to sell. In other words, while the child grasps the fact that money circulates, this circulation is not brought into any relation to the circulation of commodities.

Example: "He puts it in a little drawer."—What does he do with the money that's in the little drawer?—"After the shop has closed up he leaves some in the drawer for change and gives the other to the bank."—What does the bank do with it?—"They give it to the government."—What does

the government do with it?—"Sometimes they send some to the queen, I think—I don't know."

A third type of reply occurs when the child gives a rational economic explanation of the use of money as a medium of exchange in the circulation of commodities. Only eight-year-old children gave this type of explanation.

Example: "He gives it to the man who grows it (food) who buys some more seeds."—Who does he get the seeds from?—"The man who makes the seeds." What does that man do with the money?—"He gives the money to someone and they give him the seeds to sell," etc.

Question: Where does the money come from? The first type of reply to this question was again of a phantastic variety. Money was said to come from God, from heaven, from a gold mine, etc. The second type of reply stated that money comes from work. In the third type of reply the child mentions some sort of cycle, for example, the boss gets it from the bank and gives it to his workers, who give it to a shopkeeper, who puts it back in the bank.

For the first three questions of this section a statistical comparison was made of the frequency of the three types of reply for the eight-year-old group and for the age group five to seven. This yielded a χ^2 value of 18.11, which is highly significant.

3. The "Boss"

Question: What is a boss? Three types of definition were given by the children. In the first type the boss has no economic function at all, only a social function. Usually he is given a supervisory rôle, but no distinction is made between a boss in the army, the school, the church, etc., and a boss in a factory. Sometimes, he is only someone who helps the men.

Example I: "The boss of the office?"—Yes.—"I think it's Mr. W."—What is a boss?—"Some man is a boss of a church and he's the boss of the works. My father is the second one."—What does a boss do?—"He goes outside and gets all the letters."

Example II: "A man."—What sort of a man?—"A big man."—What does he do?—"Help him."—Whom?—"Men."

In the second type of definition the boss begins to acquire some economic function in the sense that he is someone who gives people their pay at work, in addition to his supervisory rôle.

In the third type of definition, given mainly by the older children the fact of ownership begins to form part of the conception of the boss.

Examples: "A man where you work and he owns the factory."—"He owns a big factory and he's got people to work for him."—"He owns the

factory."—"It's a man that owns a business and people work for it and he tells them what to do."

For this question a separate statistical comparison was made of the frequency of the three types of reply for the eight-year-old group and for the age group five to seven. This yielded a χ^2 value of 5.26 for which $P < .10$.

Question: Where does the boss get his money? Three types of reply were obtained to this question. In the first type the money comes from some external source, such as the bank, the government, etc. In the second type the money is obtained by saving, and in the third type, characteristic of older children, it is obtained through the sale of the goods produced in the factory belonging to the boss.

Question: How does a boss become a boss? Only two types of reply to this question were given by our children and they are sharply demarcated from one another. The first type of reply, given mostly by younger children, involved an essentially subjective explanation in terms of some voluntary factor or talent.

Examples: "The director tells him—would anyone like to be a boss, and he says he would."—"Because he's been good at work and when they're good at working they got to be a boss."—"The men that built it (the factory) sometimes choose which is the best one."—"He isn't anything and then he says he's going to be something and then he becomes a boss."

In the second type of reply we get essentially an explanation in terms of objective, economic operations, such as buying a factory, etc., which is in marked contrast to the voluntaristic responses of the previous type.

Examples: "He buys the shop off someone else and then he puts up a sign, 'men wanted,' and the people come in and get a job and then he becomes a boss."—"He builds a garage for the people who have their cars broken down and then he owns it and puts up a notice for the other men to come and help him."—"Say, he bought a factory, then he owns the factory."

For the last two questions in this section a statistical comparison was made of the frequency of the two types of reply for the eight-year-old group and for the age group five to seven. For this purpose the second and third types of reply on the second last question were grouped together. A χ^2 value of 7.58 was obtained, for which $P < .01$.

D. DISCUSSION

In analysing the results further it is necessary to make the assumption that the different types of reply obtained on each question represent different

levels of conceptual development. There are two lines of evidence in support of this assumption. In the first place there was, for each question, an age distribution of the replies which suggests a developmental sequence. Secondly, the varying levels of intrinsic complexity and richness of the replies in themselves suggest a developmental sequence from the simple to the complex types.

In the field of concepts relating to the uses of money, i.e., to exchange, the stages of development may be tentatively outlined somewhat as follows:

In the first stage the exchange of money that accompanies the purchase of goods is really a ritual. It serves no rational purpose, since buyer and seller simply interchange money, and this action is carried out in terms of a categorical imperative or because of a fear of punishment. The moral defence which the children make of an act they do not understand has points of similarity to the moral defence of the non-comprehended rules of a game reported by Piaget (4) in the case of young children.

The child, at this stage, does not grasp that the money he gives constitutes a necessary exchange for the goods he has received. The only way of explaining the coincidence of the acts is by categorizing non-compliance as immoral, as stealing. Only when the two acts are seen to involve a reciprocity, when the money is given to the seller as a recompense for the goods he has lost, is the act of purchase conceptualized as a true relation between buyer and seller. The categorical imperative thus appears to play a somewhat similar rôle in the explanation of acts as does the process of categorization in the ordering of objects when their relations to each other are not yet grasped. Thus the first stage in the development of concepts of exchange shows some correspondence to the categorical stage in the development of kinship terms (1, 3).

At a later stage of development the individual act of buying and selling is seen as one in a series or cycle, with money serving as the medium of exchange. Thus, the individual act, having lost its isolation, receives its justification not in terms of a moral imperative but in a rational manner in terms of its position in a system of acts which establish a system of relationships between people. At this point the subjective explanation of the act gives place to an objective explanation, thus giving rise to the conception of an economic act as such. This level of development appears to be analogous to the level of connected relations found in the development of kinship terms, where the individual relationship derives its significance from its position in a system of relationships and is no longer conceived of in an isolated way (1).

A similar development appears to take place in the conceptualization of relationships in the sphere of production. The basic relationship to be grasped here is that between employer and employee, or, in terms more familiar to our children, between "boss" and worker. There is first of all a very primitive stage when the child has no understanding of specifically economic relationships at all. At this stage the boss has no economic functions, he is merely a helper or a supervisor in any sphere, including the non-economic. At the same time the meaning of rich and poor is either completely unknown, or else the origin of riches is explained in phantastic, essentially non-economic ways. This level of development may be said to correspond to what has been called the pre-categorical stage in the development of kinship concepts.

The second level of development is provided by children who state that money is obtained for work performed and that it is handed out by the "boss." But they see no connection between these two facts. They do not yet say, as they will later, that money is received for work performed for the "boss." In other words, the element of reciprocity is lacking in the relation between "boss" and worker, just as, in the field of circulation, it was lacking in the relation between buyer and seller. As in that case, we have, therefore, not yet a true relationship, which would involve reciprocity, but two isolated acts or factors which are not yet linked up. In other words, we get a categorical stage where each act is explained out of itself without reference to others. The moral determination of the situation is expressed in the belief that the harder one works the more money one gets. Both acts are given a voluntaristic explanation; the worker gets more money by working hard and the boss assumes his function purely by an act of will or of choice. This being the case the source of the employer's money must necessarily be something of a mystery.

Eventually the child grasps the reciprocity of the relation between "boss" and worker. This always involves the recognition of the "boss'" ownership of the means of production, so that the worker is now seen to work for the "boss" and to receive his money as payment for this. This implies a transition from a categorical concept, where the "boss" is merely a certain type of worker (one with special functions) to a concept which defines the people in the work situation in terms of their relation to each other and to the means of production. At this stage the subjectivistic explanation of the situation gives place to an objective explanation in terms of economic acts, like buying a factory.

Finally, at the highest level of development the isolation of the relation-

ship between "boss" and worker is broken through and it comes to form part of a system of economic relations. At this stage the "boss" is seen to get his money from the sale of the goods produced for him by the workers. This implies that the formerly separate fields of production and exchange have become linked into one conceptual field, so that the individual now becomes capable of representing the *totality* of economic relationships to himself. At this stage purely rational explanations of economic processes become possible. Any economic act or relationship can be explained in terms of its position in the whole system. It is doubtful whether any of the children in our sample show more than the first indications of this stage.

It is interesting to note that most of our children appear to be at a lower stage in their understanding of economic relationships in production than in exchange. This is not surprising, since they have firsthand experience of acts of purchase, but depend on second-hand evidence for their ideas about the work situation. The stages of conceptual development do not owe their appearance simply to internal maturation, but depend on the intellectual materials with which the child is provided from outside. This makes it desirable to collect information about the variations that occur in conceptual development in connection with differences of social background. Class, national and regional differences would no doubt be found to be associated with certain differences in conceptual development. Until such information is available it is not possible to say to what extent the types of replies obtained in the present study are simply a cultural product. A certain parallelism in the development of kinship and economic concepts does however raise the possibility that there may exist some truly general features in the growth of social concepts.

E. CONCLUSIONS

On the basis of our exploratory study we may formulate the hypothesis that the following four stages occur in the development of economic concepts: (a) An initial pre-categorical stage occurs when the child lacks economic categories of thought altogether. There is no special realm of economic concepts differentiated from social concepts in general. (b) At the second, or categorical, stage the child's concepts appear to represent a reality in terms of isolated acts which are explained by a moral or voluntaristic imperative. (c) At the third stage the child becomes able to conceptualize relationships as such, by virtue of the fact that a reciprocity is established between previously isolated acts. But these relations are in their turn isolated and cannot be explained in terms of other relationships. (d) Finally,

the isolated relationships become linked to each other so as to form a system of relations. We then have a conceptualization of a totality wherein each part derives its significance from its position in the whole. At this point a purely rational explanation becomes possible.

It must be left to future investigations to indicate to what extent concepts of other social relationships held by different groups of children follow the same pattern of development.

It has been suggested that the stages in the development of economic concepts in the child may be analogous to those found in the development of kinship concepts. If this is so, then the possibility arises that these stages may be characteristic of the development of notions about social relationships in general.

F. SUMMARY

A sample of 41 Australian school children between the ages of five and eight were asked a series of 10 standard questions dealing with various economic processes, supplemented by further questioning to throw light on their replies. Several distinct types of reply were obtained to each of the main questions and these were identified with certain developmental stages. In all, four such stages were distinguished and the question of their generality was raised.

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IMMANENT JUSTICE AMONG WEST AFRICAN CHILDREN*

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A. INTRODUCTION

In his earlier work Piaget postulated that young children pass through a stage where their moral ideas are governed by an implicit notion of "immanent justice." By this he meant that "during the early years of his life the child must . . . affirm the existence of automatic punishments which emanate from things themselves" (4). In his studies of Swiss children Piaget found that 86 per cent of six-year-olds held such beliefs, a percentage that decreased to 34 in the 10-11 age group. In that work Piaget also expounded the view, which he further developed more recently, that such a decline in immanent justice should not be expected to occur in "primitive" societies.

Havighurst and Neugarten (1) attempted to check Piaget's hypothesis by a large-scale study of American Indian children. An extract from their findings, relating to the Hopi tribe, is reproduced in Table 1. Most of the

TABLE 1
PERCENTAGES OF HOPI INDIAN CHILDREN WHOSE RESPONSES WERE TAKEN AS INDICATING BELIEF IN IMMANENT JUSTICE
(After Havighurst and Neugarten, op. cit. p. 150)

	Ages 6 to 11 Questions		Ages 12 to 18 Questions	
	A	B	A	B
Third Mesa	69	82	90*	77
First Mesa	45	60	66*	84*

*Statistically reliable increase with age.

other tribes investigated by these authors also showed either no change or a significant *rise* in the proportion of immanent justice responses with increasing age. From this they concluded ". . . it is clear that Piaget's theory of belief in immanent justice in a primitive society is borne out by these data" (1, p. 150). On the basis of their results one anthropologist erected an elaborate theoretical edifice concerning the persistence of "basic orientations

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regarding the nature of the universe" (5, p. 212), which were said to survive the acculturation process.

B. PURPOSE AND PROCEDURE

The study reported here had as its aim the replication of the work of Havighurst and Neugarten in a different culture. It was carried out in Accra, capital of what has now become Ghana. The subjects were 120 school children, drawn randomly from six schools chosen as being fairly representative of the total primary and middle school population. Half the subjects were boys and half girls, but as no significant sex differences emerged in any part of the study they will not be differentiated in the analysis.

In the absence of universal compulsory registration of births it was not possible to ascertain ages with any accuracy. Hence the sample will be dichotomized into primary one to five and primary six to middle four; these correspond roughly to the age ranges 6-12 and 12-18. About one-fifth of the sample had totally illiterate parents, the remainder being evenly divided between those where only the father was literate, and those where both parents had enjoyed at least some schooling. Just over one-third of the families were polygamous.

From what is known about the social characteristics of the population at large it follows that the school children's families do not constitute a representative sample of it: they are considerably biased in the direction of the higher educational and occupational strata.

The story used for investigating immanent justice was one originated by Piaget and subsequently employed with modifications by Havighurst and Neugarten. The form devised by the latter, together with their standard set of questions, was taken over after a slight adaption to make it more suitable for the African milieu. Here it is.^{1, 2}

This is a story about two boys. These two boys named Kofi and Kwame, were out walking and they came to a place where a woman was selling oranges. Each of them stole an orange and ran away with it. But the seller saw them and ran after them. She caught Kofi and punished him, but Kwame got away. The same afternoon Kwame was chopping some wood, and the cutlass slipped and caught his foot.

Question A. Why do you think Kwame's foot was cut?

Question B. If Kwame did not steal the orange, would he cut his foot?

Question C. Did the cutlass know he stole the orange?

¹The same story was also used to assess the incidence of animism, Question C being the operative one for this purpose. This aspect will not be considered here.

²I should like to take this opportunity of expressing my gratitude to Mr. C. E. Fiscian for his valuable assistance.

Preliminary trials were conducted by me with middle school children, but the interviewing of the actual sample was undertaken by an African student skilled in fieldwork methods. The vernacular was used in the individual interviews, and the instructions were not to be content with simple "yes" or "no" answers, but to probe in a strictly neutral fashion until the children expressed their ideas at greater length; this probing, as well as the answers, were recorded on the spot. In the subsequent analysis of the material the *whole* of a child's set of responses was always considered.

C. RESULTS

When the material thus obtained was examined, it soon became apparent that it could not be simply divided into "immanent justice" and other responses without doing considerable violence to the data. In order to avoid this five different categories were evolved. These will be described, with examples.

1. *Pure Immanence.* The injury is viewed as the direct consequence of the misdeed, without the intervention of any external agency, or any naturalistic explanation being offered.

A. Because he sinned.

B. He would not cut his foot if he did not sin.

C. Yes, the cutlass knew . . .

A. Because he went and stole the woman's orange . . .

B. He would not cut his foot if he did not steal the orange.

C. No, the cutlass did not know; but his foot was cut because when Kofi was punished he was not.

2. *Act of God.* This is self-explanatory.

A. Because of the orange he stole from the woman God had punished him (lit. "God had found him guilty").

C. The cutlass did not know, but God who sees everything saw Kwame when he was stealing the orange, so he made the cutlass cut him.

3. *Inconsistent.* Partly immanent and partly naturalistic.

A. Because he stole the orange.

B. Kwame would not have cut his foot if he had not stolen the orange.

C. The cutlass did not know that he had stolen the orange. Kwame's foot was cut because he did not know how to handle a cutlass.

A. Because he was careless when he was chopping wood that afternoon.

B. He would not have cut his foot if he had not stolen.

C. It did not know, but Kwame was cut because of the wrong he did.

4. *Magical Causation*. The consequence of being cursed.

C. The cutlass did not know that he had stolen the orange. Because the woman could not get hold of Kwame to punish him she cursed him, and that was why the cutlass caught his foot.

5. *Naturalistic*. This can be further subdivided into two classes.

5a. *Causal guilt*. This is particular interest, as the sequence crime-injury is conceived as a causal one, but mediated by a natural process.

A. Because he was a thief.

B. He would not have cut his foot if he had not stolen the orange.

C. The cutlass did not know; but Kwame, having a guilty conscience, was so nervous (lit. "his body was shaking") that he could not control the cutlass and that was why it cut him.

5b. *Pure accident*.

A. It was accidental—he was not careful when he was cutting the wood.

B. Whether he stole or not, the cutlass would still cut him if he held it carelessly.

C. It did not know. Kwame did not hold the cutlass firmly, that was why it cut him.

The distribution of these response-categories is given in Table 2. The main age-changes are both highly significant: a decrease in pure immanence,

TABLE 2
PERCENTAGE DISTRIBUTION OF AFRICAN SCHOOL CHILDREN IN ACCRA ANALYZED IN
TERMS OF THEIR TOTAL RESPONSE PATTERNS

Categories	Primary one to five	Primary six to middle four
1. Pure Immanence*	45	8
2. Act of God	33	47
3. Inconsistent	15	17
4. Magical Causation	7	8
5. Naturalistic**		
a. Causal Guilt	—	10
b. Pure Accident	—	10
All categories	100	100

*Significant decrease in the higher age group (P less than .001).

**Significant increase in the higher age group (P less than .001).

and the emergence of a naturalistic type of explanation.

These findings clearly confirm the prevalence of notions of the sort labelled "immanent justice" by Piaget among young African children, not one of whom gave a purely naturalistic answer. However, if one wants to go on to more detailed quantitative comparisons one runs at once into difficulties. In order to elucidate their nature, it is necessary to go back to Piaget's original exposition. The basic problem concerns the interpretation of the

abstract concept "belief in immanent justice" in terms of actual responses. Unfortunately Piaget offered no unambiguous guidance on this point. If one confines it to what has here been called "pure immanence," then the trend is very similar to that found in Switzerland; but what about "acts of God"? From Piaget's comments one is led to infer that he himself excluded such responses from his table showing the percentage incidence of immanent justice. One may venture to doubt, as did Lerner (2), whether this exclusion is really justified.

A few pages further in the same work Piaget (4, p. 257) discussed the origins of the belief in immanent justice, putting forward three possibilities: it may be inborn, the direct result of parental teaching, or the indirect product of adult constraint. He rejected the first as improbable on a *a priori* grounds, but admitted that the second—which includes punishments attributed to God—may account for the majority of cases. The last hypothesis was that "the child, having acquired, thanks to adult constraint, the habit of punishment, attributes spontaneously to nature the power of applying the same punishment." As the child cannot be isolated from parental teaching it follows that this last tendency cannot—as Piaget fully recognized—in practice be shown to exist independently. Obviously this applies also where "God" or any other agency are not spontaneously mentioned, as with our category of "pure immanence"; further probing in such instances would almost inevitably have to depart from the principle of guarding against any suggestions, thereby becoming self-defeating.

Thus there appears to be a good case for admitting "acts of God," and then the picture changes: immanent justice is present in a much higher proportion of young children, and the decrease among older ones much less marked. It seems to follow that there is an inherent arbitrariness in any assessment of the incidence of immanent justice, which no refinement of mere techniques would be able to overcome.

The next problem to be considered is Piaget's suggestion that immanent justice should not be expected to decline in "primitive" societies. In brief, Piaget postulated that in "modern" society adult constraint, the major factor in producing the belief in immanent justice, is powerful in childhood but gradually diminishes with adolescence and beyond; in other words, young people achieve intellectual and moral autonomy hand in hand with economic independence. As against that, childhood is the only period of relative freedom in a closely-knit "primitive" society. On reaching adolescence children are subjected to initiation rites which, far from liberating them, place them under the overwhelming moral constraints of the elders, "themselves

abject slaves to the will of the spirits, to that of their ancestors, and to the traditions linked thereon."

The main objection to this conception is that it utilizes unrealistic models of "modern" and "primitive" society respectively. In order to overcome this objection it would be necessary to grade various cultures and sub-cultures—for even "modern" societies are far from homogeneous in this respect—according to the degree of moral constraint imposed by each of their members at different phases of the life cycle.

In this connection it should be observed that neither the majority of American Indians, nor the urban African sample of the present study constitute "primitive" populations in Piaget's sense; on the contrary, the conflicting pressures of traditional and Western moral norms have tended to produce a situation of uncertainty and insecurity, in which magical beliefs flourish; witness the "curse" responses, which might have been more frequent but for the probable inhibiting effect of the school environment. It is curious that this type of response has not been reported in any of the American Indians, although the existence of similar beliefs seem to have been established by anthropological work.

What about Havighurst and Neugarten's claim to have confirmed Piaget's hypothesis? It is suggested here that they did nothing of the kind, their results being at least partly artefacts arising from a faulty method. Careful perusal of the examples quoted earlier will make it evident that an adequate classification of any particular subject is possible only on the basis of his total response pattern. By treating the answer to each question separately, Havighurst and Neugarten not merely lost a great deal of information, but also introduced a bias in the direction of immanent justice, a bias which becomes increasingly severe with the older subjects. This was largely the consequence of being satisfied with simple "yes" or "no" replies, particularly with reference to Question *C* which is essential for understanding the children's ideas. Even when a fuller answer was given, they do not seem to have made effective use of it. An illustration may help to clarify this. In the scoring rules (1, p. 146) it is stated that the response "He was thinking about what he had done and was careless" would be scored negative for animism. Although there can be no quarrel with this as regards the issue of animism, it appears likely that the answers to the two earlier questions *A* and *B* were in such cases of the immanent justice type, as in the present example 5a. If so, it follows that by adherence to mechanical scoring rules applied to atomistic units these earlier answers must have been wrongly classified as immanent justice ones. The probability of such mis-classifica-

tion is greatest with responses of the "causal guilt" type, which become more frequent with increasing age.

These criticisms may have an air of abstract speculation about them, but fortunately it is possible to demonstrate their presumptive validity more directly. This is done in Table 3, where the African responses

TABLE 3
PERCENTAGES OF IMMANENT JUSTICE RESPONSES AMONG AFRICAN CHILDREN ACCORDING TO HAVIGHURST AND NEUGARTEN'S SCORING SYSTEM

Primary one to five Questions		Primary six to middle four Questions	
A	B	A	B
93	100	80	75

have been analyzed in the manner of Havighurst and Neugarten. The impression conveyed now becomes one of little change with advancing age, an impression which comparison with Table 2 will show to be grossly misleading. Their evidence must therefore be largely discounted.

Since the above was first written an investigation carried out in the Belgian Congo has appeared, which includes a section on immanent justice (3). Whilst differing in some important respects from the work just described, there is sufficient in common to make a comparison instructive. The sample, consisting of 1547 boys from mission schools, seems to have been rather heterogeneous. The 18 to 19 age group in particular, numbering some 300, was clearly very different from the remainder and will therefore be left out of consideration. The method used was to get "Monitors" in each school to administer the task, which had to be done by the pupils in writing, 93 per cent replying in the vernacular. The question relating to immanent justice was as follows:

KISEKU has just stolen 200 frs from a shopkeeper. He hurries towards his village. While going through the forest a tree falls. Kiseku is killed. What do you think of his death?

The whole approach was thus far less "directive," and in fact over half the boys replied in terms of the consequences for the offender, e.g., "He is in hell." The concern here is with the other 43 per cent who inquired into the cause of death. The relevant information is given in Table 4.

It will be apparent that the categories are broadly similar to those of the present study, although somewhat less detailed. There is a decrease in "punishment of unspecified origin," equivalent to the "pure immanence" of Table 2, and an increase in punishments attributed to God. The "evil

spell" responses, corresponding to "magical causation," show a somewhat curious distribution, but their inclusion is itself of interest. Finally "simple accidents," which covers roughly the same ground as the "naturalistic" category, increases regularly throughout the age groups.

TABLE 4
PERCENTAGE DISTRIBUTION OF AFRICAN SCHOOLBOYS FROM THE BELGIAN CONGO ACCORD-
ING TO THEIR VIEWS ABOUT THE CAUSE OF DEATH
(After Henry Loves, op. cit., p. 357)

Types of cause	Ages		
	12	14	16
Punishment of God	56.5	58.0	72.0
Punishment (unspecified origin)	42.0	32.0	21.0
Evil Spell	1.0	5.0	0.0
Simple Accident	0.5	5.0	7.0
All types	100.0	100.0	100.0

The general trends discovered in Ghana thus receive some independent confirmation from the material collected in the Belgian Congo, and the convergence is particularly noteworthy in view of the considerable differences in modes of approach.

D. CONCLUSIONS

The conclusions derived from the present study may be summarized as follows:

1. The existence of beliefs falling broadly under Piaget's heading of "immanent justice" has been established among African children in Accra.
2. Their incidence cannot be quantitatively assessed, in any culture, without further conceptual clarification.
3. Piaget's views about immanent justice in so-called "primitive" societies rest on doubtful assumptions and their alleged confirmation by Havighurst and Neugarten was shown to be questionable.

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SOME METHODOLOGICAL CONSIDERATIONS CONCERN-
ING THE STUDY OF APTITUDES AND THE ELABORA-
TION OF PSYCHOLOGICAL TESTS FOR
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Though the term aptitude is utilised in the heading of our paper, following a rather general practice, it will not be used further in our text. Indeed, the validity of the aptitude concept is questionable. An aptitude is held to be a neurophysiological disposition which explains the existence, after a period of maturation or appropriate learning, of more or less important capacity in a given sector. An aptitude remains always an hypothesis, indeed an unnecessary hypothesis. Besides, psychological tests can only measure capacities and for this reason we prefer to speak about intellectual capacities or behaviour. (We shall not be concerned with other, e.g., sensori-motor capacities of Africans.)

The notion of aptitude as a hereditary disposition exercising a limiting effect on some defined behaviour, becomes even less valuable, when it concerns peoples who suffer from lack of education as in the case of indigenous African populations.

If in such groups the necessity arises of predicting work performance by means of tests, it also becomes important to study learning procedures whereby work capacity can be developed, and to provide adequate information as to how any desired development can best be achieved.

For a long time scientific psychology has concentrated research on the study of aptitudes. From being looked upon as relatively unchangeable, aptitudes are now realised to be malleable. By means of proper communication, a given capacity may frequently develop in a person who was previously devoid of it. This idea of the importance of communication, i.e., education in the widest sense, as against the study of static aptitudes, seems to us to be exceptionally fertile when applied to these intellectually underdeveloped populations.

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A first approach to the study of the intellectual capacities of Africans is to observe and to make an inventory of the activities which are valued within original African cultures. Accurate psychological knowledge of the behaviour involved in these activities, of the techniques employed by them and of the materials they utilise would be valuable in order to locate and to overcome the difficulties which Africans experience in adjusting to the demands peculiar to an industrial civilisation.

According to Ombredane (1), behaviour favoured by African cultures is principally of a musico-choreographical nature, whilst by contrast the activities encouraged by Western culture are of a computational-geometric nature.

For ages Africans have lived relatively isolated from the world. This isolation caused by the geographical situation (the Sahara, inaccessible rivers and coasts) and by biological factors (malaria and other diseases which decimated strangers) explains to a large extent, if not entirely the backward techniques of Africans. But in general, since the beginning of this century and in an inevitable manner, the African continent has become Westernised, at least in the sense of an assimilation of the material cultures of the West. This transformation demands important psychological adjustments, e.g., a familiarity with mathematical ways of thinking, spatial forms, abstract symbols, a need for precision in motor skills, rapid and sustained rhythm, in short with a vast array of new elements that are ever present in our Western culture.

As African life becomes more markedly industrialised and urbanised, it must encourage modes of conduct, which, though they existed perhaps as latent dispositions, were not at all valued. We do not wish to state that complete Westernisation should be Africa's ideal. It is more probable that Africa will achieve a new culture, that will comprise, besides some indispensable Western techniques, some specifically African linguistic and artistic elements.

Besides a minority of the African population, that has had very little contact with European technology, there is another minority that has assimilated Western skills pretty well completely. But the great majority of Africans, in whom we are principally interested in this paper, are in transition between the original African culture and the technical culture of the West. These populations experience difficulties, which a study of original African cultures will permit us to understand and to overcome.

A second mode of approach to the study of the intellectual capacities of Africans is by way of genetic psychology. We know that the first years of life, from birth to five years, are of considerable importance for later intel-

lectual development as required by our Western techniques. There is no doubt that the habitual processes of pre-school education in many parts of Africa are not propitious for the type of intellectual development demanded by Western scholastic education. Compared with European children, African children are inferior when entering the elementary school, because they lack familiarity with the symbols, the forms of thinking, and the skills of Western culture. Also the elementary schools are generally not yet up to standard. The African cultural milieu provides inadequate stimulation from an intellectual point of view. It is consequently very probable that numerous potentialities that exist at birth in African children, will never become manifest, because of a lack of cultural environmental stimulation, and lack of suitable education.

Here we should mention some possible research projects that would be of great value on the African continent in its present stage of rapid evolution and which will also be of great interest to general psychology.

We should examine the degree of learning capacity which remains at different ages in subjects who never experienced any systematic education. In other words: what expectations may we hold out to a subject whose education has been entirely neglected during the first five, 10, or 15 years of life? Thus we may discover, e.g., that it is impossible to master a particular type of reasoning at the age of 14 unless certain foundations have been established at five years. Such a research project is actually feasible in Africa, because there are still some populations that have had very few contacts with Western culture. In 10 or 20 years' time this will probably no longer be the case.

Another investigation would permit us to arrive at definite conclusions concerning the value of pre-school or nursery-school education. Examination of the psychological literature on this subject shows that the results of studies concerning the value of pre-school education for later intellectual development are inconclusive. As mentioned by Anastasi and Foley (2), these investigations, carried out in the most advanced countries, were limited to a comparison of groups of children of high socio-economic level. Control groups of those who did not attend nursery schools usually received a good education at home. If, in these investigations the nursery-school did not seem to have much influence, the explication may be that at high socio-economic levels, the home provides an adequate substitute. In Africa, long-term investigations can be planned which should yield a decisive answer concerning pre-school education. Is the nursery school of paramount importance in underdeveloped countries and would it favour the rapid transformation of these countries, as some people believe? A balanced answer could

undoubtedly be obtained in Africa. Meanwhile one wonders whether socioeconomic level, the intelligence of the parents which moulds that of the children through the subtle and numerous contacts within the home, the richness of the environment in general are not even of greater importance.

A third approach is by way of psychometrics. At first sight these techniques, which are generally specific to the situation for which they were constructed, would appear to be useful in Africa, both in industry where one has to select adults, often without any schooling, who are capable of acquiring certain techniques, and at school, where it is important to send to the very few secondary schools only those pupils who have a reasonable chance of success. But first let us ask whether such psychological tests are valid when used in the African milieu. What are the methodological difficulties encountered?

The situation varies according to the nature of the groups investigated. It is convenient to distinguish three types: children of school age, frequenting school; adults without any schooling, adults who have received a more or less appreciable amount of schooling.

a. Children of school age. This group is characterized in the first place by the paucity of their pre-school education, and next by linguistic difficulties. Besides a mother tongue, used with their parents, and a lingua franca used with their fellows outside the family circle, these children learn a European language. The result of this bi- or trilinguism is that no language is known thoroughly; the vocabularies are poor, the exact significance of words is rarely known, the grammatical rules remain rudimentary. A third characteristic of this group is the artificial nature of the elementary schooling. It is limited to the teaching of the mechanics of arithmetic and of a foreign language; but it has no content, nor ties with the real life of these children. Instruction is generally given by native teachers suffering themselves from a deficiency in general culture, a rudimentary bi- or trilinguism and lack of comprehension of the value and significance of the mechanisms that they teach. All that one can say about these children is that they are in a state of acculturation; they experience great difficulty in grasping the essentials of Western culture. As Ruesch, Jacobson, and Loeb (3) say, they function at an inferior level of integration, accomplish only partial and mechanical functions without grasping the sense or perceiving the unity of the new system of values.

It does not seem necessary to invoke other factors to explain the poor results obtained by these children on psychological tests, that are considered to be simple in our culture. When first applied, the test situation is far

too novel and too strange. But this explains also the sometimes remarkable progress that the children make on immediate re-testing, when this complete unfamiliarity no longer obtains.

For African children tests are principally useful in educational guidance. Apart from the fact that tests of Western type—and it is hard to think of any others—always seem more or less inappropriate for young Africans in full acculturation, no important difficulty presents itself during their use.

With African children from 11 to 15 years, who have completed the elementary school cycle, no difficulties are encountered of the kind reported on certain Indian groups, who would not respond to the competitive element; on the contrary, Africans are very receptive and readily accept the test situation.

It is clearly necessary that the tests should be adapted, in so far as the material used and the types of problems posed are concerned, to the outlook and the level of acculturation and education of the subjects. The familiarity of African children with a variety of objects differs according to locality. In Europe and North America, the distribution of objects and dissemination of information is much more complete. One causes no prejudice to European children who have never seen a kangaroo if one uses an image of this animal in a test. African children also have never seen a kangaroo, but they have never heard it mentioned, nor have they ever seen an image of it. Actually it is very difficult to find European material that has already been completely assimilated and it is equally difficult to find specifically African material that has remained significant and is otherwise suitable. For these reasons it is impossible to construct a test of the "intelligence scale"-type, which is applicable to an appreciable proportion of the African population in acculturation.

When considering the types of problems, included in intelligence tests, one comes across other difficulties. Even prolonged explanation does not render an instruction such as "continue a series" intelligible to many subjects. The verb "to complete," used in some instructions, does not seem to exist in certain indigenous languages, where only the verb "to add" is known. In general, very detailed and patient instructions are indispensable.

To allow for unfamiliarity, Ombredane proposed in his study on the Asalampasu (4), to repeat the same test several times. This method has some disadvantages. Interindividual variability will become more and more restricted and validity will also be reduced. The capacity to adapt to new situations and to understand new problems is an important element in psychological tests. It is ignored when a test is applied over and over again.

To familiarise children with the test situation it seems preferable to precede the application of the tests, to which one desires to attach some signification, by a series of practice tests of which the scores are not used.

The results of verbal tests are of undeniable value as predictors of ultimate success at school; but, because of bi- or trilinguism their significance differs from that in Western countries. They are less an index of intelligence than of specific knowledge. We intend to verify this statement by means of a factorial analysis.

Besides intelligence tests one utilises achievement tests for educational guidance, i.e., tests of which the content is based on what has been specifically learned at school. It appears that in Africa more weight should be given to this type of test. Indeed, the correlation between a battery of achievement tests and an intelligence test is as high as the correlation between two intelligence tests. On the other hand the school does nothing to prepare pupils for dealing with intelligence tests, which moreover, contrary to what happens in Western countries, have little contact with the daily lives of African children. There is much to be gained therefore from giving considerable weight to achievement tests.

The results and value of psychological tests for African children, who live in great centres, where they attend relatively good elementary schools, are not essentially different from the results obtained in Western countries. In the course of our research projects, we often found coefficients somewhat less stable than those reported on Western groups. Probably this is the result of our method: we utilise analytical tests on subjects of the same age. It seems evident that intelligence scales applied even after an interval of many years on groups that are heterogeneous in age will give more stable results.

We wish to note finally that African children, compared with Western children, show, especially when first tested, a score displacement for reasoning in all its forms and also for spatial visualization tests. Their general knowledge is very limited and this influences perhaps their reasoning activities.

b. Adults without schooling. Here tests are of interest to determine the level achieved by this class of persons in some typical Western activities.

There appears to be an almost complete inability to do a test such as Koh's blocks even in the case of people who have decorated their huts with multi-coloured geometrical pictures. One must accept that this artistic activity, which originated probably independently in this country, is accomplished without any analytical activity such as dismantling, perceptual reorganisation, and without transition from an over-all design to its elements. Tests

such as "progressive matrices" and the "culture-free" tests of Cattell, that are composed of geometrical pictures between which one must find analogies and variations according to a predetermined rule, have little significance for people who have never had any contact with European culture.

Without personal field experience, it is difficult to appreciate that paper and pencil are very strange objects for the people of the bush. During experiments with the "progressive matrices" test we observed that a page did not constitute a unique entity for them. The two pages together formed a continuous whole. They appeared to be particularly incapable of analysing and taking account of more than one factor.

There is an unexpected incapacity to deal with the simple material presented by the three form-boards of the scale of Grace Arthur. The old form-board of Séguin comprises a cross, a diamond, a circle, a star, a hexagon, a half-circle, a square, and an oval, which they must replace as fast as possible in the corresponding openings. This very simple task presents considerable difficulties to the people of the bush. For example, they do not differentiate clearly between the star with five points and the cross and they repeatedly attempt to place one in the space intended for the other. In case of failure, they do not see their error immediately, but they persevere for several seconds with the obviously wrong response. Generally, they have to engage in much trial and error activity to find the openings that correspond to the given forms. This indicates that these simple forms are entirely strange to them. The difficulty of discrimination results in very high time scores which place these adults at the level of American children of 5.5 to 6.5 years. The casuist form-board comprises among other things two circular openings of different dimensions that must each be filled by three sectors of 120° . The subjects often place two pieces in an opening in such manner that only the points touch each other and the pieces are in a symmetrical position one to the other. Two empty spaces remain, each too small to receive the third piece, which completely baffles the subjects.

When one watches the subjects working away at the solution of these simple problems one is struck by their planless trial and error. Nevertheless, there is nothing unusual in this. Civilised man falls back on stupid measures when he cannot open a lock, when he has difficulties with a motor-car the mechanism of which he does not understand, in short when the situation is beyond him. The interesting point, however, is that the illiterate African is defeated by a situation that is very simple to those reared in Western culture.

Nevertheless, if one wants to test illiterate Africans—which is only mean-

ingful if one has some practical and pragmatic object in view, e.g., to predict their chances of success in industry—it is this type of material that has to be used, a fundamentally Western, but very simple material. Biesheuvel (5) has constructed in this manner tests of high validity for the classification of labourers for the gold mines in South Africa. Utilising the Progressive Matrices 1947—coloured form for children—Ombredane (4) has demonstrated on adults the favourable influence of some years of rudimentary schooling in childhood on the reasoning capacity at adult level.

c. Adults with more or less advanced schooling. According to the level of the degree of schooling that has been reached, the situation approximates more and more that existing in Western countries. There are no specific methodological problems, besides those mentioned in the other sections, and which also have some relevance here.

We can perhaps conclude this paper by saying that the efficient utilisation of psychometrics in Africa is conditioned by the educational and cultural level of the populations to which the tests are to be applied.

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ACCULTURATION OF ATTITUDE AND PERSONALITY AMONG KATANGESE WOMEN*

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A. PROBLEM

An essential aspect of the Bantu World View concerns the need to transmit the vital impulse. Through her fecundity, woman either attains or fails to attain this ideal, thereby provoking positive or negative attitudes towards herself. This study was designed to show whether or not the process of acculturation affects the attitude of the milieu towards women in the same manner as it affects their personality.

B. HYPOTHESES

The two hypotheses to be tested are the following:

1. Both attitude towards women and the female personality vary according to degree of acculturation.
2. With acculturation, women change their view on the traditional rôle of woman more rapidly than men.

In seeking to improve their situation, women would tend to advance more quickly than men towards western standards, since these are in favour of the former. The direction of the difference being specified, these two hypotheses will require a "one-tailed test."

C. SUBJECTS

Two towns in Katanga, industrial S.E. Congo, were selected because of their different stages of acculturation: Elisabethville with a population of 130,000 Congolese who have settled permanently there since the thirties, was compared with Kolwezi, a younger and less advanced city with a population of 30,000 settled there since the last war. The comparison, therefore, is not between a tribal community and a European city but between two towns at different stages of acculturation. The reason for not choosing a more extreme group, such as a tribal community, was to obviate the necessity of

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using a Bantu language other than Swahili, which was spoken by the author.

The attitude towards women was examined by means of a Sentence Completion Test (adapted from the test of Rotter) in a group of 137 subjects, divided into six groups of men, women, and adolescents. The test was administered collectively in Swahili, without an interpreter. In the instructions, emphasis was placed on making sure that each item was properly understood, rather than on speed. The samples were drawn from the most advanced sections of the populations of the two cities and were equated in terms of marital and professional status. They were assistant teachers, both men and women, at schools and community centres, whilst the adolescents were pupils at teacher training colleges. It was not possible to separate the latter according to their origin. They were added in order to study the developmental aspect of attitude towards woman.

The personality of 29 women from two towns was studied by a *TAT* of 15 pictures, giving a total number of 435 stories to be analysed.

D. PROCEDURE

The Sentence Completion Test adapted for the Katangese was composed of 47 items retained from a first selection. Items were grouped to cover significant zones of behaviour governed by a number of strict native customs and rituals: marital and extra-marital relations, sources of marital conflicts, such as aggressiveness, arguments about food, fecundity, sex separation, woman's inferiority. Below are a few items:

Item 9. "Girls are afraid . . ."

Item 11. "My mother . . ."

Item 12. "When a baby dies at birth people think that the mother . . ."

Custom considers the mother to be responsible if her child should die at any time between conception and weaning. It was therefore necessary to structure the item so as to direct the attention of the subject towards this critical period.

The following are examples of traditional tribal responses:

Item 12. "When a baby dies at birth people think that the mother . . . is a witch; ate it; had committed adultery."

(The more usual Western responses are: . . . "is sad; she will have other children.")

Item 19. "I feel ashamed . . . on meeting my stepfather (incest taboo); to eat with my husband."

Item 21. "A woman refused to cook the food . . . when she is playing about with another man." (Symbolic association between food and sexual life.)

Examples of other test items are the following:

- Item 28. "If a woman does not give way to her husband . . ."
- Item 36. "Woman has desires . . ."
- Item 47. "Woman feels inferior to man . . ."

The responses were rated on a six-point scale (0 to 6). For a statement implying a Western attitude towards women 0 to 2 was scored; for one showing a traditional tribal attitude, 4 to 6; a neutral statement received 3. Responses had been classified as traditional or western by three African and three Western experts of both sexes.

Subjects and each group of subjects were ranked in terms of total scores on a continuum from those living according to tribal custom to those adjusted to Western ways of life.

The Thematic Apperception Test pictures were drawn by a Congolese artist, Mwenze from the Academy of Elisabethville. Fifteen pictures giving widely varying themes were found suitable. Five were pictures showing group scenes, five depicted only one person, and five depicted two or three persons.

The illustrations represent Cards 1, 2, 4, and 12. Card 1, a tom tom player, was presented first because it was generally well accepted and put the subjects at their ease. The women frequently mentioned an unseen group for which he was playing. This type of addition was made in describing other pictures too.

The second picture evoked positive themes such as dances, as well as aggressive themes where the mother had a punitive rôle, which is normal in a sample of women owing to sex separation throughout education.

The fourth picture represents a heterosexual (or sometimes a homosexual) relationship in which the man and the woman are not face to face as in a situation of a Western type but one behind the other according to traditional behaviour. Thus, if a subject described a personal contact, this would be all the more valuable as it would not be prompted by the drawing.

Picture 12 is a family scene around the fire in the evening. This is the time for telling stories and legends—a traditional Bantu cultural practice. The *TAT* card tried to keep as close as possible to this spontaneous expression of collective and individual needs in the family circle.

The following stories are the responses of two women to Picture 12: the first response gives a family theme in which relations appeared to be better in the past than today; the second subject introduced a religious theme in which magic power is condemned. (The translation is literal, word for word):

Kigo (3E 12). This picture, I laugh a lot at how they are sitting (in) this picture; it was evening after eating. Now it is time for rest, for in the village after the meal one has time to breathe. They can sit around the fire; the fire (is) in the middle and everyone can get round to warm themselves at the fire. It is their candle, yes, it is their lamp, it is the only thing which can give them light in their house or outside.

But this picture fills me with joy; it reminds me very much of the old times at home. Nowadays we are very cold, because we miss warming ourselves at the fire. The elders, if they were cold, they gathered wood, got their clothes and warmed themselves. Now this picture makes me very happy. They tell very fine stories. If they have seen something, they explain it to their children; the wife chats with her husband, (they) gossip and are very happy. But, we could act as you see here, that's all right. We have only lamps in the house; but you can light the lamp without your husband, you are alone with their children; it is bad, it is sad, we are really very unhappy.

Mbema (5E 12). I see this book, now I see God's (book). He is like Jesus Christ; I see a man sitting here like a chief and like people on the day at the end of the world.

People after they have committed all their sins die and come before the Almighty one, who, yes, will show his supremacy. He is speaking to them now and every one of them is looking at him, only at him; the fetishes stay down on the earth, all of them stay down there, the husbands stay, the children stay. This Lord who is almighty, yes, he is sitting, he is saying to them he is showing them: "look at the evil, your evil which you have (done). Now everyone is looking at him, only at him. Yes, that is what I see in this picture.

The two groups of women were tested individually in Swahili without an interpreter. The protocols were recorded on magnetic tapes.

Besides a qualitative analysis, six quantitative variables were explored. These were: Productivity, estimated by number of lines for each protocol; Characterisation according to whether figures were pointed out by their distinctive characters: sex, age, rôle, relations, or only by a vague term such as "someone," "people." This variable appears to be the quantitative expression of possibilities of identification. The four remaining variables are Aggressiveness and three dichotomies borrowed from Murray: Extracception-Intracception, Passivity-Activity, and Pessimism-Optimism. Their rating was done on a four-point scale, from 0 to 4, similar to the *SCT* scale. The scoring system was thereupon tested statistically. Reliability coefficients between assessors' judgments of these factors ranged from .87 to .96. These correlations were obtained from a group of 50 subjects, of both sexes,

chosen at random. In order to avoid bias which might result from having judges with the same cultural background, the judging was done by an international team consisting of an Arab, a Vietnamese, an Afro-Indian, and two Europeans.

The "split-half" method applied to the 137 subjects gives a mean coefficient of .72; all the coefficients reach a confidence level of .01, the adults giving the more reliable results.

The "Test-Retest" method, after 8 months, for 33 subjects, gives a coefficient of .54 at the confidence level of .01.

The "construct validity" should either be attained or rejected if the hypotheses of difference are confirmed in showing the predictive value of these techniques.

E. RESULTS

The findings may be summarized as follows:

The first diagram (Figure 1) presents the *SCT* results of the four adult groups. The middle point gives the Median, and the two extremes the

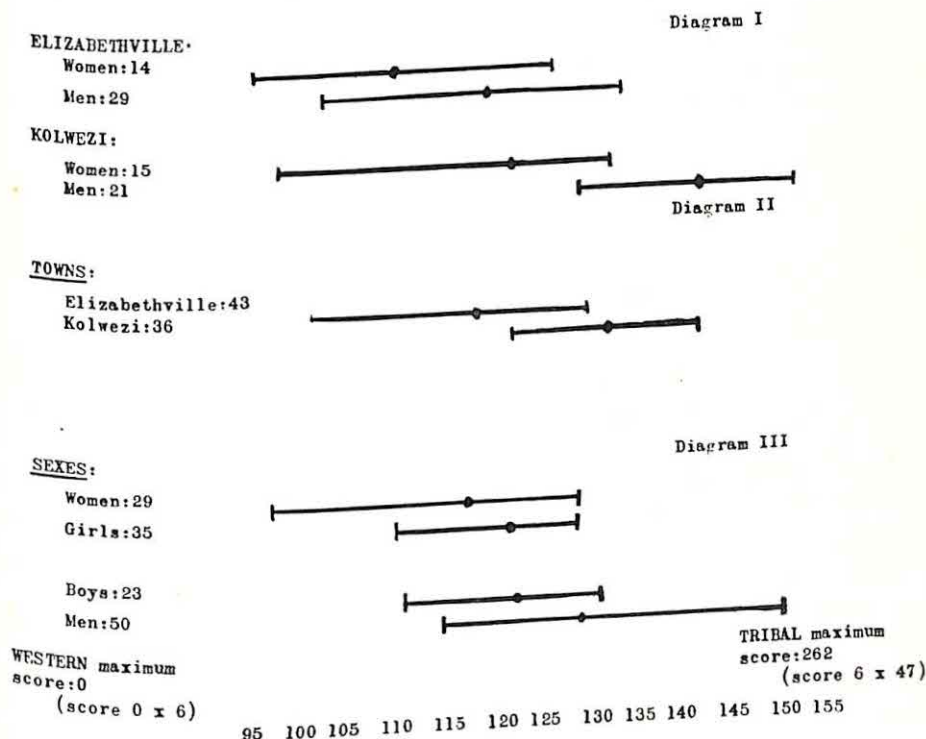


FIGURE 1
COMPARISON OF THE *SCT* RESULTS FOR EACH GROUP ON THE MEDIAN AND THE QUANTILES Q_3 AND Q_1

Quartiles Q1 and Q3. The two groups of men show more tribal traditional-type responses than the women.

Diagram II presents the results grouped according to city. The hypothesis that a change in the attitude towards women occurs with acculturation is sustained at a confidence level of .01 ($\chi = 6.52$, one-tailed test).

Diagram III shows the hypothesis that change in attitude is related to sex is sustained at the .05 confidence level for adults ($\chi = 3.66$). The difference is not significant in the case of adolescents. With age, the attitude towards women becomes more negative in the case of men, more positive in the case of women. However, these trends are not significant enough to differentiate between adolescents and adults.

In the case of the *TAT*, the general hypothesis was formulated that acculturation had the effect of bringing about better personality adjustment. A number of hypotheses were tested:

I. That those with more advanced acculturation would show greater articulateness and richness of positive feelings. The Productivity, Intracception, and Optimism variables were expected to be relevant to this hypothesis.

Productivity gives a difference between the two towns statistically significant at .01 level, Optimism at .005 level, while Intracception shows no significant difference.

TABLE 1
COMPARISON OF THE SIX PERSONALITY VARIABLES ON THE FISHER TEST

	Medians		Significance
	Elizabethville <i>N</i> = 14	Kolwezi <i>N</i> = 15	
Productivity	92.5	54.5	.01
Characterisation	184.5	142	.025
E-Intracception	31	29.5	N.S.
P-Activity	29.5	30.5	N.S.
P-Optimism	27.5	23.5	.005
Aggressivity	11.5	14.5	N.S.

N.S.—non-significant.

II. That acculturated people would be able to perceive others in their distinctive, external characters. Characterisation shows a significant difference significant at the .025 level.

III. The remaining hypotheses, which were not defined in a sufficiently independent manner, predicted a more controlled aggressiveness and decreasing passivity in the most detribalised women. Neither Aggressiveness nor the Passivity-Activity dichotomy showed any significant difference.

The hypotheses are therefore confirmed for three variables out of six.¹ However, no significant differences were observed in opposition to the hypothesis of better adjustment following on acculturation.

F. CONCLUSIONS

1. The *SCT* is a valid measure to differentiate the attitude of groups towards women, in accordance with degree of acculturation and with sex difference. Because only one Bantu language, Swahili, could be used, cities had to be selected between which the cultural difference was minimal; the test is likely to discriminate optimally between more extreme groups, aged between 20-30 years. The results confirm the hypotheses that were formulated.

2. The *TAT* produced more doubtful results. Technical shortcomings, such as the small number of subjects, may be responsible. But the different results for the two tests may equally well be due to the fact that the *SCT* like the Rosenzweig Picture-Frustration Test (1) has more structured stimuli than other projective techniques. In the *TAT*, the balance between structuring and ambiguity may not have been sufficient to prevent disturbances of perception by anxiety in Katanga people and to allow optimal interaction between personality and situation. These first results raise problems which could only be solved by further research on the perception mechanisms in different cultures.

3. The *TAT* results lead to the formulation of a new hypothesis: the tribal traditional attitude towards women which is unacceptable to the white man tends to disappear before the deeper personality variables which determine it are really modified. The Ego would thereupon seek to cathect a substitute object, or to behave in a manner acceptable to or tolerated by the white man. Thus sexual needs would no longer find satisfaction in polygamy but in prostitution and the security need would be met by the clairvoyant and fortune-teller rather than by the witch-doctor, while "talismans" would take over the protective rôle of the amulets. This study should therefore be followed up by testing the attitude towards these new syncretic values.

4. In the projective field, where the symbolism specific to each culture plays such an important rôle, comparisons between black and white attitudes or personalities appear to be untimely at the present stage of research.

¹At a confidence level of .05, the number of significant results in six tests that could have occurred by chance is .3. Three significant results were actually obtained. The Chi-Square Test of the difference between the observed and expected frequencies yields a value of 23.6, which is beyond the .01 confidence level. The observed number of statistically significant differences could therefore not have arisen from chance alone.

5. It should be noted that the two projective tests were not used as instruments for individual clinical diagnosis but as research tools for group differential comparison. On the basis of such differences as have been established, a qualitative analysis of acculturation can be attempted, which will form the substance of another paper.

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SOCIAL INFLUENCES IN ZULU DREAMING*

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A. INTRODUCTION

To the Zulu, as to depth psychologists, dreams are of great importance. They can greatly influence the life of the individual Zulu—mainly because it is held by the people that dreams are, to parody Freud, “the royal road to the ancestors.” The ancestral spirits, venerated in the indigenous religion, are believed to use the dream as their chief means of communication with this world. In dreams they can convey both approval and disapproval of the actions, past, present, and future, of their descendants. In addition, dreams are held to be of both diagnostic and prognostic significance in the tribal medical system—particularly where psychogenic disorders are concerned.

The *Isangoma* diviner—diagnostician, soothsayer, and interpreter of the ancestors—most highly regarded medical consultant in Zulu society, is only admitted to his profession when he has developed a “soft head” and become “a house of dreams,” “the new home of the ancestors.” This process is seen to have begun with his symptoms of emaciation, fugue states, and disturbed dreams. *Ukuthwasa* (emergent possession by the ancestors) having been diagnosed, the afflicted person will receive, usually for some 18 months to two years, an intensive training in the traditions and craft of the cult from a senior diviner. His dreams will be analyzed in terms of fairly stereotyped interpretations which have been handed down in this

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The field work was undertaken mainly at the Charles Johnson Memorial Hospital, Nqutu, Zululand, and to Doctors Margaret and Anthony Barker and their staff I owe most grateful thanks for assistance and co-operation in the work. Upon the integrity and ability of my Zulu research assistant, Charles Mthembu, the whole investigation depended, and no one could have wished for a better colleague.

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Finally, I must thank my wife Margaret both for her unfailing support and for drawing the Thematic Apperception Test with brilliance.

"apostolic succession" for several hundred years. Finally, he will experience the "Great Dream" in which he will go out to the river and then go under the water in a deep pool. There he will meet with a huge python who will give him his future power by allowing him to collect white earth from beneath it. He will then emerge from the water as a new person—the home of the ancestors—"with his ways now clear" (1, 5, 16). The whole of the dream, within its life context, is obviously one of symbolic re-birth, using symbols found in many parts of the world (10, 14). In the light of the findings reported below it is of interest that the great majority of *Isangoma* diviners (circa 90 per cent) are women. Male diviners are frequently transvestite and are generally regarded as being "feminine." In Zululand the marriage of a male diviner is regarded with Rabelaisian incredulity.

Lastly, many dreams are held to be of prophetic import, and may indicate a course of action to be followed by the dreamer. The one complication here is that the real portent of the dream may be either similar or opposite to its manifest content. For example, the relative of a sick man may dream that he has died. The diviner may, under certain circumstances, predict his death—under others, his recovery (5). The situation, despite the difference of time relationships involved, has some of the elements implicit in the interpretation of dreams in the West, where "dream reversal" is suspected (9).

This paper, however, does not deal with the more specialised dreams of Zulu life and the comments above are given merely to show that the Zulu have been, for centuries, concerned with the content of dreams. The findings reported below show how the dreams of ordinary men and women are themselves, in their turn, circumscribed and influenced by the social pressures and sanctions of the culture.

B. PROCEDURE

The field work was done in the Nqutu district of Zululand, over some two years. I was forced to use fairly direct question and answer methods for the eliciting of information, as free association methods were impracticable. Rural Zulu see no sense in the latter and I found it impossible adequately to convey the idea to them. Despite these limitations of method some clear differences emerged when differing groups of dreamers were compared. It must be remembered throughout, however, that the findings are concerned with the manifest content of remembered dreams. As I asked questions about dreams, I soon found that I had been allotted a rôle as a kind of "white *isangoma* diviner," in contrast to the surgeons and physicians

of the hospital, who fell into the general class of "white herbalists" in the methods that they used.

The main investigation was concerned with the incidence and aetiology of certain local psychogenic disorders common in the area and the relationships of these states with marital status, age, obstetrical history, dreaming, etc. In the course of this some 600 subjects, a fairly representative sample of the population, were asked: "How much do you dream?" and: "What do you dream about?" In this way the central manifest content of a large number of dreams was obtained, together with a rough estimate of the amount of remembered dream activity. This formed part of the extensive investigation. In the intensive research, carried out on some 120 women subjects, the same questions were asked about dreams, but later free interrogation by the interviewer was allowed, and the individual subject was asked to describe two recent dreams in detail. For a detailed discussion of the area, method, sampling procedures, etc., see Lee (18).

The results, in general, lent themselves readily to quantification and statistical handling, as stereotyped dreams (in terms of their central imagery or themes) were very common. All dreams collected could be readily classified under less than 50 main "content" headings. It would, I think, be next to impossible to secure this degree of limitation and uniformity in dreams collected from any sections of a complex Western society. Of additional assistance was the apparent lack of latent content in many of the dreams:

The case of young children affords us a convenient test of the validity of our theory of dreams. In them the various psychological systems are not yet sharply divided and the repressions have not yet grown deep, so that we often come upon dreams which are nothing more than undisguised fulfilments of impulses left over from waking life. *Under the influence of imperative needs, adults may produce dreams of this infantile type* (Italics mine) (Freud, 11).

The purpose of this paper is certainly not to show that Zulu dreams are "childish," but to illustrate the imperative nature of some motives which underlie the dreams of this people. It is always difficult, if not impossible, to prove the lack of latent content in a reported dream, especially where method is as restricted as in the present investigation. Nevertheless the probability that such dreams may occur in adults, under certain circumstances, will be shown in the body of this paper.

Two last possibilities must be taken into account. That the dreams reported were merely culturally conditioned answers to questioning—"The proper thing for a person of my age and sex to say"—was, I think, shown by the great variety found in the detailed dreams of the intensive group.

Despite close correspondences in main themes and images, genuinely individual detailed dreams were reported, though many common symbols were shared. Also, as dreams are important to the Zulu, it might be that stereotyped interpretations were common currency in the area, and the reports would follow the interpretations relevant to the life circumstances of the dreamer. In fact, less than 10 per cent of all women claimed to know the "meanings" of any dreams, and these were mostly older women. The interpretation of dreams is very much the prerogative of the diviner. Laymen do not feel entitled to express any definite opinions in this field.

C. RESULTS

Firstly, women showed a much greater amount of reported dream activity than did men. Of 389 women, 52 per cent said that they had "many" dreams, and 48 per cent reported "few" or "no" dreams. Comparable figures for 136 men were 40 per cent and 60 per cent, the difference being significant at better than the .01 level of confidence. These figures confirm the general impression gained from many clinical interviews with subjects who were not included in the quantitative study. "Many dreams," in the above context, meant "much dreaming," as not much variation in central content was found. A woman would often report dreaming one stereotyped dream at least three times a week for some months. She would report this as "many dreams." It is of interest that despite women's aversion to nearly all dreaming (in the vernacular, they complained of being "worried" or "stabbed" by dreams), they were less likely to show serious and incapacitating symptoms as the result of dreaming any particular dream repeatedly. Men, on the other hand, regarded nightmares, particularly those of the classical "suffocation" type, with a very deep horror, and often had to be hospitalized as the result of ensuing anxiety symptoms. The dream affect was sufficiently strong to precipitate a full scale anxiety neurosis.

Between the sexes, there were great group differences in terms of the central imagery or themes of reported dreams. Table 1 illustrates these.

This table, abstracted from the extensive investigation, included virtually all the dreams volunteered by rural Zulu. A very small number of other very rare themes were elicited by questioning in the intensive investigation. So that it will be seen that the number of different dreams, at any rate in terms of central imagery, is very restricted. It is also apparent that more women dream of intrinsically terrifying objects, such as "monsters," than do men. That the latter, in general, tended to enjoy dreaming more than did women was confirmed in interviews with individual subjects. The

TABLE 1

Central theme or imagery of dream	Explanatory notes	Percentage of women (N:414) reporting the dream	Percentage of men (N:139) reporting the dream
Dead people	These are usually dreams of the ancestors.	32	18
Water	Ponds, lakes and still water generally.	32	5
Snakes		17	3
Flooded rivers		16	6
Crowds of people	Usually tribal gatherings.	10	10
Spooks (<i>Izipokwe</i>)	Ghosts (not ancestral spirits), often believed to have been sent by a sorcerer.	10	4
Meat		10	3
<i>Tokoloshe</i>	Short, hairy, priapic, very muscular men, believed to live in rivers and to attack women sexually.	7	2
Food, eating, and beer	The local beer is made from the staple food, maize.	9	3
"A baby"	Dreamer is usually suckling or caring for a small baby.	7	Nil
Children	Apart from the specific mention of "a baby",	7	1
Being chased	By Crowds, Cattle, "Someone", Cars or "A man".	6	1
Fighting	The dreamer fighting somebody else.	5	9
Motor cars		5	4
Dogs		4	2
<i>Izilewane</i>	Literally, "small wild beasts", an avoidance term for "monsters."	4	1
Trains		3	1
Thunder		3	1
Being attacked	Someone trying to kill the dreamer	3	4
Cattle		2	10
A wedding		2	5
Precipices		2	1
Europeans		2	1
<i>Imikhovu</i>		1	3
	Short, resurrected and "doctored" men. The familiars of sorcerers.	1	1
Flying	Dreamer flies through the air without mechanical aid.	1	1
Baboons	Commonly regarded as the familiars of sorcerers.	1	Nil
Being stabbed	By a man, or people.	1	4
Money		1	Nil
Being attacked	By women.	Nil	4
Sexual intercourse or love-making			
A bicycle		.25	1
Cats		Nil	1

only dreams liked by women are those of "a baby," flying, money, and, in a very few cases, sexual intercourse or lovemaking.

But the most important fact that emerges from Table 1 is that dream content, for the particular sex, is derived almost exclusively from areas of social experience permitted by the culture in the indigenous system of sanctions, of some 50 to 100 years ago. Thus women, acting under a traditionally very strong cultural imperative, dreamt of babies and children, while cattle, the acquisition of which is their chief economic goal and source of prestige, appeared in the dreams of men. Zulu women, in the nineteenth century, were allowed no part in the handling of cattle. This was a very strong taboo, relaxed for only one day in the year. Nowadays, however, most of the women must perforce work with the cattle, as the majority of the men are away from home for some 10 months of the year as a result of the migrant labour situation. The women show no conscious guilt over this handling of cattle, so far as could be ascertained in personal interviews.

Traditionally the one exemption from the cattle taboo occurred on the day of the *Nomkumbulwana* festival.² On this day the women and girls were allowed to dress in male clothing—the men being confined to their huts—and to drive the cattle, at the same time singing obscene songs and assaulting, by privilege, any men found straying from the huts.

Now the transvestite and possibly wishfulfilling nature of the *Nomkumbulwana* celebrations led me to ask the women subjects of the intensive investigation: "Have you ever wished that you were a man?", and to this from some 50 per cent of the women, I elicited strongly affirmative answers. This result has been duplicated in a recent predictive study the full results of which are still being assessed.

Briefly, the position is: modern Zulu women, handling cattle daily, and often very jealous of the life situation of men, are unable in their dreams to take over the symbols which, by traditional social sanction, are the prerogative of the male. This tends to confirm the Freudian hypothesis of the early introjection of the parents (8)—the parents also, presumably, having relatively "time-lagged" super-ego values—and would mean that the super-ego content of the individual, at any rate in its more unconscious aspects, may have relatively little to do with contemporary values. In a previous study (17) it was found that educated Africans tended to assimilate the technology of the West before acquiring its moral codes, and this result can, I think, reasonably be attributed to processes in the individual similar to those discussed above.

²*Nomkumbulwana*—"The Princess of the Sky" was, in effect, a Zulu Ceres. A detailed account of the festival can be found in Asmus (1).

In the present study it is clear that not even the conscious wish to be a man, on the part of a female dreamer, can break down the prohibitions of the past. A final point concerning the cattle dreams, again reflecting the social situation, is that the very occasional woman's "cattle" dream found was usually of being pursued and gored by an ox or bull, whereas those of men were pleasant wishfulfilment dreams of the ownership of large herds, the inspanning of superb teams of oxen, etc.

More males dream direct dreams of fighting—traditionally a male activity in this warrior society. The showing of aggression by women is strongly deprecated. All such aggression is found only in the covert patterns of the culture. In this connection it is of interest that the answer to the question: "When have you wished that you were a man?" was frequently "When I am annoyed, I would be able to fight," and that the crying fits that were the main subject of the whole investigation were often precipitated, in individual girls or women, by feelings of rage which could not be expressed in violence. Here again we see the operation of a traditional taboo in the circumscription of manifest dream content.

One possible breaking down of this "symbol" division between the sexes can be found in the dreams listed. Meat feasts and beer drinking are usually more the prerogative of males, though there are no very general taboos on these as feminine gratifications. It is possible that the greater incidence of these dreams among women reflects their desire for maleness, though this interpretation must, for the present, remain hypothetical.

In areas of experience permitted equally to both the sexes—exemplified by dreams of tribal gatherings, the appurtenances of sorcery, or ancestors—no great differences appeared. Men did not reflect their greater amount of contact, relatively, with Western civilization in their dream content and this may serve to emphasize that the great majority of remembered manifest themes are, culturally, out of date.

Certain dreams, notably those of Flooded Rivers, Water, Snakes, and *Tokoloshe*³ are predominantly dreamt by women. Let us take the Flooded

³The *tokoloshe* is a small, muscular, priapic and hairy being who is reputed to live in rivers, emerging to wreak mischief in general and, in particular, to attack women sexually. In dreams his rôle is aggressively sexual. Cf. Boerner (quoted by Jones, 13): "Sometimes voluptuous feelings are coupled with those of *Angst*; especially with women, who often believe the night-fiend has copulated with them (as in the Witch trials)."

A useful account of the *tokoloshe* can be found in Kohler (16). This being may also be referred to (as a form of avoidance of the dreaded name) as "*ilwane*" or "small wild animal" by women, and this usage may form an interesting symbolic link in the language with the nature of the beings concerned. Cf. Jones (13): "Animals lend themselves to the indirect representation of crude and unbridled wishes. Analytical experience has shown that the occurrence of animals in a dream regularly indicates a sexual theme. . . ."

River and Water dreams first. The local interpretations, by diviners or knowledgeable laymen, is: "to dream of flooded rivers means that you will give birth to a baby." Allowing for a difference in time relationships and purpose of interpretation, this is an orthodox Freudian interpretation (9). The Zulu are cognisant of the part played by the amniotic fluid in parturition and, in the language, as a reinforcement of this interpretation of the symbol, there are many links between the ideas of water and of child-birth. For example, the word *isiZalo* means both the uterus and the mouth of a river.

Babies themselves sometimes appear in river dreams, though this is not common. E.g., (dreamt by a woman of 25 years who had lost a stillborn child):

I dreamt that one day we went to the river to wash. When we had finished we collected our clothes. I had a young baby and it fell into the water. I put my arm in the water and rescued the baby, just at the point of death. After I gave it first aid treatment it became better. We went home. I woke up."

But the great majority of river dreams are of the river in spate. The dreamer is being swept away, or attempting to avoid the flood water when half way across, or is standing on the bank unable to cross.

Direct dreams of giving birth to, suckling, or caring for a baby are also interpreted locally as meaning that the dreamer is pregnant. These dreams are liked, in contrast to the anxiety dreams of flooded rivers. Dreams of still water are neither liked nor disliked to any great extent, and bear a similar local meaning of pregnancy.

So much for these dreams and their local interpretations. We must now examine the situation of the dreamers more closely. The obstetrical history of over 400 women was collected at the same time as the dream material. (The obstetrical memories of Zulu women are extremely detailed and accurate as the bearing of children is vitally important to them.) Table 2 gives the results for the dreamers of six common dreams.

It must be remembered that none of the dreams was, for the individual dreamer, necessarily exclusive of others—thus it would be perfectly possible for one and the same woman to report dreaming, on different occasions, of, say, water and ancestors or crowds and flooded rivers. We are here concerned with the group characteristics of collectivities selected on the basis of similarity of particular responses. The procedure is actuarial, and the dangers of applying actuarial procedures to the individual must be kept in mind. Though, to quote Meehl (20): "As to Allport's emphasis upon the distinction between prediction from categories and predictions from the in-

TABLE 2

1	2	3	4	5	6	7	8	9	10	11	12		
Dream (central imagery)	No. of women reporting dream	Marital status. Married, widowed, single.			Mean age.	SD of ages.	Per cent of dreamers (married or widowed) having borne no child.	Per cent of dreamers (single) having borne no child.	Per cent of dreamers (married, widowed & single) having borne children but with none still living.	Per cent of dreamers (married, widowed & single) with children still living.	Total no. of children borne.	Average no. of children per married or widowed dreamer.	Ratio of living children to total no. of children borne.
"A baby"	27	M. 24	W. —	S. 3	25	6.4	33	8	7	52	59	2.4	.49
Flooded rivers	64	49	10	5	31	10.5	11	8	8	74	222	3.8	.61
Still water	129	88	14	27	30	13.8	20	18	9	53	295	2.9	.61
(The above are all "birth" dreams. Comparable "control" figures for three other common dreams are given below.)													
Dead people	128	92	23	13	35	15.0	16	8	7	70	466	4.0	.62
Crowds	40	22	7	11	31	15.0	17	28	7	47	99	3.4	.61
Spooks	38	25	4	9	32	14.2	(13	21	16	50)	124	4.2	.56
(Columns 6, 7, 8, and 9 total to all dreamers of any particular dream (i.e., 100% for each instance.))													

M, Married; W, Widowed; S, Single.

dividual, it should be clear that in principle all laws even of the so-called dynamic type refer to classes of events."

It will be seen, in Table 2, that dreamers of "a baby" had very much the worst record of married infertility, both complete and partial (Cols. 6, 10, 11). Even those who had borne children had subsequently lost more than half of them (Col. 12). Also of significance is that this group were the youngest in terms of mean age, the distribution being normal (Cols. 4, 5). Had they been older it might have been expected that more of their children would have predeceased them.

Now these obstetrical characteristics of the group are the very ones, in their society, which would cause, in the individual, the greatest psychological need for "a baby." In Zululand, the young bride must bear a child early in marriage or be despised of all other women. The migrant labour situation—80 per cent of the young married men are away from home for an average of some 10 months in the year—together with high venereal disease rates (partly a function of the same migrant labour situation) makes conception early in marriage less likely, nowadays, than in the traditional subsistence economy. So, probably, dreams of "a baby" are commoner than they were, as are the "new" psychogenic disorders of women which have arisen in the last 60 years or so (18).

Be this as it may, it seems that these dreams of "a baby" are certainly of a wish-fulfilling nature. They are dreamt chiefly by young married women on whom the social pressure to prove their fertility is very great. The dreams appear to lack latent or symbolic content and to fall under the classification of highly motivated dreams cited by Freud above. Now Eysenck (7) states: "On the basis of detailed observation of the dreams of many patients, we arrive at the hypothesis that 'dreams are wishfulfilments.' From this hypothesis we deduce (sic) that starving men should dream of food. If this can be shown to be so, our hypothesis is supported; if this can be shown not to be so, our hypothesis is decisively disproved." Eysenck then goes on "decisively to disprove" the Freudian hypothesis by citing evidence to show that subjects starved in the *laboratory* did not dream more of food than did controls, and continues: "Thus experimental procedures show Freud's anecdotal evidence up as inconclusive and irrelevant; they also disprove his fundamental hypothesis regarding the nature and purpose of the dream." In effect, however, Eysenck has *actually* tested the hypothesis "All wishes will be reflected in dreaming." Not part of the Freudian canon.

The present study has tested the hypothesis that "Women dreaming of babies should have more need of them than women not dreaming of babies,"

and the Freudian hypothesis of dreams as wishfulfilments has been partially confirmed for one particular dream in Zulu society.

Further confirmation of this finding exists in other material collected. Subjects with a history of pseudocyesis, commonly found in the area, also tended to dream the direct "baby" dreams. Also, in the intensive investigation, in an attempt to elicit dominant wishes, the open ended question was asked: "What would you like most in the world?" Of 21 subjects who had volunteered the information that they dreamt constantly about "a baby," nine gave "a baby" as their wish and four said "children." Of 97 subjects who volunteered other dreams or claimed not to dream at all, only eight gave "a baby" as their wish, and 10 said "children." The difference is significant at the one per cent level of confidence.

So much for the dreamers of "a baby." By comparison, the group dreaming of "still water" contains many more single women who have borne no child, and married or widowed women who have borne relatively few (Cols. 3, 7, 10). The age distribution is much more scattered than in the case of "baby" dreamers (Cols. 4, 5). There is no great amount of complete married infertility (Col. 6). The probability is, in terms of obstetrical characteristics (compared, say, with the dreamers of "dead people"), that a wish for offspring is still likely to be present in the group, though not in as strong a form as among "baby" dreamers. But here it is necessary to try to explain the use of the water symbol in the place of the direct birth dreams.

Before we do this, however, let us first take into account the third type of "birth" dream, that of the flooded river. This group contrasts, in terms of its concomitant characteristics, strongly with the other two above. Mostly married women [like "baby" dreamers but unlike "still water" dreamers (Col. 3)] they show, comparatively, a very low rate of complete married infertility (Col. 6), in contrast to all other groups, including those groups reporting the "control" dreams. They are a normally distributed age group, significantly older than "baby" dreamers. They have borne many more children than either of the other two "birth dream" groups. The dreams are dreams of great anxiety, often involving fear of the loss of the dreamer's life in the flood water.

With these facts before us it seems possible to construct a model, using ethnographic evidence, which will satisfactorily account for the facts of symbol formation in the "water" and "flooded river" dreams, and for the specific nature of the symbols adopted.

The married Zulu woman who has borne no child has her conflict—in

this case, fear of childbirth and the economic difficulty of rearing children⁴ versus the biological need for children allied with the very strong cultural imperative to prove herself fertile and so justify the bride-price paid for her—resolved by the strength of the latter motives. She dreams directly of “a baby.”

The Zulu girl, unmarried, with a high premium set by the society upon the value of her technical virginity, fears marriage, but expects to bear children as a mark of her attainment of adult status. She dreads the discipline that will be imposed by her future husband's relatives, particularly his mother, when, as is customary, she goes to live in the man's household. Of 114 women asked, in the intensive investigation: “What time of your life was the happiest?” 17 replied “When I got my first baby,” but 10 said “Before I married,” and 17 “When I was a girl,” or “Schooldays.” Two local sayings are pertinent here: “*Akuqhalaghalahlul' isidwaba*”—literally “No proud girl ever had the better of the skin skirt (of marriage),” and also “to be treated like a bride,” a phrase expressing the epitome of contemptuous maltreatment.

The married woman who has borne two or three children no longer has a very strong motive for bearing many more, although the cultural pressure to do so is still, in a very mild form, there. She is not, however, in the disgraceful position of the childless wife. She has proved her fertility and justified her existence.

With these two groups, unmarried girls and moderately fertile wives, we still have unresolved conflicts about childbirth, although they are not very intense. In the case of the former, fear of marriage and childbirth versus her own biological nature and the long term expectations of the society. In the case of the latter fear of further childbirth and increased economic strain versus a fairly mild social demand. From all the evidence available, these conflicts are very equally balanced, and the cultural imperatives are not strong enough to produce a direct wishfulfilment dream. The dream is the dream of “still water,” and little anxiety attaches to it in the mind of the dreamer. This dream is, in some senses, intermediate between the two other “birth” dreams. Symbolism is present, but the affect of the specific image adopted is relatively innocuous.

⁴In parenthesis, the situation as to these motives must be given very briefly here. Childbirth, in Zululand, is frequently very difficult and dangerous because of bad primitive and “magical” midwifery practices and also of anatomical difficulties—the pelvic formation of the average woman making easy birth unlikely.

The cost of childbirth is often of grave importance. The people of the area are very poor—the district being about 10 times overpopulated for its carrying capacity for healthy human beings. Infant mortality, largely as a result of malnutrition, is about 400 per 1000 live births.

Finally, we get the nightmare dream of the flooded river—often with the life of the dreamer threatened within the compass of the dream. This is dreamt by married women with considerable experience of childbirth. Here the fear of further deliveries and childrearing is very intense and is still in conflict with social pressure to continue bearing children for as long as possible. This latter motive may be reinforced by competition with younger co-wives in the polygamous situation. Fear of childbirth and rearing is still socially unacceptable, and again we get the formation of a dream symbol, but with a heightened emotional affect—horror in the dream—and anxiety symptoms upon awakening. Even menopause does not necessarily bring release from this dream, as there is still conflict between the motives conditioned by years of social pressure and the new-found status of “a man” granted by the society. The post-menopausal woman is allowed many hitherto masculine prerogatives, but must relinquish any desire for more children and may have to suffer the sexual competition of younger wives.

Generally, then, this evidence seems to confirm the hypothesis that symbol formation in dreams is dependent upon a state of unresolved conflict in the dreamer, and that anxiety shown by the choice of a frightening symbol will be a function of the anxiety aroused by one or more of the factors of the original conflict.

Cf. Jones (13): “It is a general law that the more intense is the ‘repression’, in other words the greater is the conflict between the repressed desire and the conscious mind, the more distorted will be the dream that represents the fulfilment of that desire.” In the light of the present findings, it is more difficult to agree with the same author when he writes: “Broadly speaking, there is an *inverse* (italics mine) relationship between the amount of distortion present in the ideas (condensation, symbolism, etc.) and the amount of *Angst* present.” This rule might apply as between the two symbolic birth dreams above (in that the idea of ‘flooding’ is closer to the reality), but it does not seem to hold if we compare both of these with the direct dreams of “a baby.” In the latter case less *Angst* or continuous conflict is experienced by the subject, both in real life and in the dream. Greater need—yes. Greater *Angst*—no.

The snake and *tokoloshe* dreams are frankly sexual in character—and are often of violent sexual attack by either of these. The local interpretation of the snake dream is frequently: “This means that there is a man that you fear.” Again a remarkable parallel with Freud, in his view of snakes as “those most important symbols of the male organ.” With both these dreams, those of “Izilwane”—the “small wild animals” discussed above, must be linked.

Now pleasurable direct dreams of sexual intercourse and lovemaking are dreamt by men, and by a very few unmarried girls. Sexual intercourse, among the Zulu, is largely directed to the satisfaction of the male. Most men have few strong conflicts here, and there is little cultural prohibition. The migrant labour situation exacerbates the need as there are few women available in the towns, and again we have a direct wish-fulfilment dream, without symbolism or apparent latent content. The question that remains to be answered is how these dreams can also occur in young unmarried women.

Pre-marital sex play (the only prohibition being on the actual physical penetration (3, 15)), is greatly enjoyed by the Zulu girl. The sweetheart of her particular choice will take care to exercise skill in his lovemaking, aware of the threat of possible rivals. The relationship is both exciting and physically satisfying, unlike sexual congress in marriage. As a result, at this stage, the prospect of full sexual intercourse is inviting enough, and the way is open, in the absence of anxiety and unresolved conflict, for the direct wish-fulfilment in the dream.

Married women, however, tended to dream of snakes and *tokoloshe* more frequently when their husbands—normally away—were home on holiday. From all the clinical evidence available, it would seem that the sexual difficulties and frustrations of married women are increased by the physical presence of the husband. Here we have a symbol formation in the dreams, together with very great anxiety. These are regarded as being the most horrible and terrifying dreams of all. They are, in type, analogous to the dreams of "flooded rivers."

At the beginning of the research I had thought it probable that the migrant labour system would subject women to intolerable psychic as well as economic stress, but in the event this was not in fact confirmed. The situation even seems to give a certain amount of relief from the fear of sex in marriage. Women who might have been expected to show psychic traumata as a result of having to do men's work formerly taboo to them were, in fact, the less likely to be nightmare ridden. Women "worried by dreams" belonged, by and large, to the more traditional elements of the population, closely tied to their feminine rôles, and were not as common among those who had achieved a certain measure of "masculine" function in such things as money matters, dominance in the homestead, etc.

Rough correlations also appeared between the ages of dreamers and the particular dreams dreamt. Ancestor dreams occurred in women of all ages from 14 to 70 years. Snakes, *tokoloshe*, and flooded river dreams were practically limited to women under the age of 50—while dreams of "a baby"

and children were reported by women of ages when childbearing might be considered very probable, between 18 and 35. Dreams of "a wedding" were found in an even younger group, mostly unmarried. "Fighting," a comparatively common dream in men, was a dream of a few unmarried women under 22. Overt aggression, after marriage, is forbidden the Zulu woman by her culture. Briefly, then, the dreams of Zulu women may be said to be generally appropriate to their age, status, and rôle.

Further evidence, throwing some light on dream content, emerged from other aspects of the investigation. *Tokoloshe* and babies were frequently hallucinated by non-psychotic Zulu women. Some 30 per cent of all women studied showed a history of auditory or visual hallucinations. None of these were gravely deranged, though anxiety attacks and "crying fits" sometimes followed the experiences. Some women indeed, seemed to have an affection for their particular *tokoloshe*, though they tended to report, when in hospital, that it was the patient in the next bed that had been brutally raped. An amusing example of "displacement"! In a form of the Thematic Apperception Test that I used in the intensive investigation, three of the pictures were derived from Zulu dreams. These were: (a) a snake lying on a sand spit in the middle of a river, (b) a flooded river, with a vague figure upon the farther bank, (c) a *tokoloshe* approaching some huts. For all three stimuli a definite pattern of reaction emerged. The anxiety ridden group—sufferers from the local "crying fits" which I was investigating—and very closely corresponding to the individuals "worried by dreams" tended to avoid, in their stories and descriptions, the real nature of the unpleasant stimuli. To them the flooded river was "a forest." The *tokoloshe* a harmless old man or madman. The snake, though recognized for what it was, was dead, harmless, or asleep. The control group, on the other hand, which contained many "non-dreamers," recognized the pictures for what they were, and commented freely upon their horrible nature. This latter group appeared to use fewer perceptual and/or apperceptual verbal defences than did the anxious group. Differences here were statistically significant.⁵

Finally, there is some evidence that Zulu dream content is changing, at any rate superficially, as a result of the culture contact situation. Better educated women sometimes made use of Western imagery. When I met members of the nominally Christian separatist and syncretist sects (Cf. Sundkler, 21), I found that the ancestors—the "dead people" of the tradi-

⁵It would be of interest to present these pictures of unpleasant dream content tachistoscopically, to see whether the relationship between anxiety and failure to report recognition can be explored in this way. Lack of equipment in the field prevented this being done at the time (Cf. 4, 12, 19), etc.

tional dreams—had suffered a sea change into "*Ingelosi*" ("Angels"). These angels, on further investigation, proved to be the selfsame ancestors, dressed in white robes and with wings attached.

It is sometimes found that whole sequences of a dream may follow a traditional theme, but be superficially clothed in modern dress. For example, the following one, dreamt by a Christian woman:

I dreamt I was ill. I was on my way to Church. I was told to make my offerings. I was to pay sixpence, and to pay a shilling for my dead relatives. I did this. After I had done this I recovered from my illness. Advice was given that I must never give less than sixpence in my offerings.

Here we have the traditional propitiation of the ancestors (they are believed to show their displeasure at the actions of their descendants by visiting them with illness) by the giving of a sacrificial gift. All this within the modern framework of the Christian religious usage.

One last example of the more "modern" type of dream comes from a relatively highly educated woman who had lived with her husband in Johannesburg—a rarity in the Reserves. In this dream we see something of the stresses of town life and labour for the African, together with a great nostalgia for the country:

I was with my husband. We were walking together in a street in Johannesburg. We were lost and could not find our room. We had forgotten our room number. He also told me that he was sacked from work. We walked until we came to a place with fine vegetables, all green. I asked my husband to come to me so that he might sleep in the greenery. He went into some thick grass. I called him but he did not answer the call. I was worried and woke up.

I have not touched, in this paper, on the great mass of material found in Zulu dreams which illuminated the ethnography, value systems, and witchcraft systems of the area. Changes in witchcraft beliefs, folktales, etc., which are to be found almost yearly in the accounts of informants, are often absent in the dream. In the dream the *tokoloshe* is always a *tokoloshe* and behaves as a traditional *tokoloshe* ought to do. In descriptions, or in Thematic Apperception Test responses, he may often be confused with the *Umkhovu*—another short man, a doctored and resurrected corpse (6, 16)—whose traditional function is solely that of familiar to a witch. In the nineteenth century this would have been unheard of, a display of crass ignorance of the facts of life. Now it is common. It would appear that the unconscious minds of individuals are very stable repositories of the past, and can be used as a valuable source of ethnographic material.

The collection of dreams from large samples of populations, even by crude question and answer methods, may materially assist the psychologist or anthropologist to penetrate the screen of "ideal culture" so easily supplied by obliging informants, and may throw considerable light on the actual operation of the values of any society.

In parenthesis, one dream that I stumbled upon is of rather exotic interest. In an earlier field trip I found that dreams of "graves" were reported by a few women. I asked for a description of these "graves," and was told that they were made of four flat stones, making a rectangular box, with another stone as a lid. At the time this description struck me as most peculiar, as it bore no relation at all to traditional Zulu burial methods. It was only later that I realized that I had been given a perfect description of a burial kist, common in Neolithic Europe. Dream graves, then, among the Zulu, can differ from the ones used by the people since times immemorial. Whether we have here a genuine museum piece of an archetype or not is beyond all useful conjectures, though the occurrence seems very difficult to explain in terms of cultural diffusion.

D. SUMMARY

For centuries, dreams have been important to the Zulu people. They have been regarded as a channel of communication with the ancestors, and as such have been interpreted by the local diviners. The field work for the present research was carried out in two stages: (a) the extensive investigation of some 600 subjects, (b) the intensive investigation of some 120 female subjects. The manifest content of remembered dreams was elicited from all subjects by question and answer methods. In the intensive investigation these were supplemented by a form of the Thematic Apperception Test.

Zulu dreams were found to be very limited in content, and stereotyped in terms of central imagery. This fact enabled quantitative comparisons between groups of dreamers to be made.

The dreams of men and women were compared, and it was found that the dream content of women was largely circumscribed by prohibitions from the indigenous system of social sanctions of the last century. Super-ego values would appear to be "time-lagged."

Local interpretations of symbols were found to coincide with orthodox psychoanalytic interpretations.

Groups of women, representing the dreamers of different dreams, were compared against the background of their obstetrical histories. A lack of symbolism in highly motivated dreams was found—a phenomenon reported

by Freud. In addition, the Freudian hypothesis of the dream as a wish-fulfilment was partially confirmed.

When groups dreaming various types of "birth" dreams were compared, against an ethnographic background, a hypothetical model could be set up to account for the specific content of each type of dream. It would appear that symbol formation in dreams may be dependent upon a state of unresolved conflict in the dreamer, and that the *Angst* shown by the choice of a frightening symbol will be a function of the anxiety aroused by one or more of the factors of the original conflict.

Certain terrifying dreams of sexual meaning lent themselves to the same type of quantitative and explanatory procedure. Generally, the dreams of Zulu women would appear to be appropriate to their age, status, and rôle.

Supplementary evidence was gained from clinical interviews and the use of a Thematic Apperception Test. Hallucinations and test responses, particularly those of "defence," fitted well the overall pattern of unconscious mental activity investigated.

Dream content is beginning to be affected, superficially at any rate, by the culture content situation, though, in the main, it seems to be more invariant than verbal accounts of folklore, witchcraft beliefs, etc. The unconscious minds of individuals would appear to be a very stable repository of the past, and a valuable source of ethnographic material.

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THE BANTU CLERK: A STUDY OF RÔLE EXPECTATIONS*

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A. INTRODUCTION

Recent studies carried out by the Human Relations Programme of the Survey Research Centre, University of Michigan (5, 6), and by other workers (9, 18), have indicated the importance of studying the social rôle and rôle expectations² of persons occupying different positions within an organisation. They have shown that application of the concepts of rôle theory (14, 17, 19) can lead to a better understanding of sources of tension, conflict or integration within an organisation, as well as to the prediction and interpretation of the attitudes and behaviour of persons occupying specific positions within the group. As part of a comprehensive study of the Bantu civil servant, an analysis was made of the social rôle of the Bantu clerk as perceived by two criterion groups, the white supervisors of the clerks and the Bantu clerks themselves. This paper presents and discusses sources of agreement and disagreement between rôle expectations held by the white supervisors and those held by the Bantu clerks, relates rôle expectations to data on job efficiency and discusses the implications of the findings.

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¹This paper deals with a group of Africans who are Bantu-speaking. Since the technical designation used by their employing body is Bantu Clerk, this designation has been used throughout this paper. The study, "The Bantu Civil Servant," is investigating factors which affect job satisfaction, morale, and productivity among Bantu clerical workers employed by two large public bodies in Johannesburg. The study is financed by the National Council for Social Research and is conducted under the aegis of the National Institute for Personnel Research, Johannesburg. Very special thanks are due to Dr. Simon Biesheuvel, Director of the Institute, for invaluable guidance and encouragement at all stages of the research and for his most helpful comments on this paper. The author would also like to thank Professor James Irving, Rhodes University, for contributing some of the ideas discussed in this article, and Dr. J. de Ridder and Mr. A. Masilela of the Institute for their assistance in collecting the material on which this paper is based. Grateful acknowledgment is also due to the Institute of Social and Economic Research, Rhodes University, for the provision of office accommodation and other facilities during the period of analysis and writing up.

²A rôle may be defined as behaviour that is expected of people who occupy a certain position in a social system. Thus rôle expectations consist of shared attitudes or beliefs held by relevant criterion groups about what rôle occupants should or should not do (5).

B. HYPOTHESES

In planning this study of rôle expectations, certain hypotheses were formulated which the investigation sought to test. Furthermore as the larger study on the Bantu Civil Servant progressed, additional questions arose which it was hoped that his analysis of social rôles might elucidate. These hypotheses are all elaborated below.

1. Hypothesis I

The rôle expectations of the efficient Bantu clerk, as perceived by the two criterion groups, white supervisors and Bantu clerks, will differ from each other both in the relative importance which each group attributes to the qualities selected and in the range of qualities selected.

The theoretical considerations that led to the formulation of this hypothesis were as follows:

a. *Status.* White supervisors and Bantu clerks occupy very different status positions in the social hierarchy of the organisation in which this investigation was conducted. This difference is further reinforced by the sharp differences of status imposed in South Africa on grounds of colour. The white supervisors conceive their rôle expectations of the clerk from a superordinate position while the clerks formulate their own rôle expectations *in situ* as it were, as occupants of a subordinate position.

This difference may also be discussed from the point of view of psychological field theory (8). The clerks, in revealing their own rôle expectations would do so from a central position looking out on their psychological field as a whole. The white supervisors, in contrast, would be sensitive to the rôle of the Bantu clerk only as one element in their own psychological field and therefore they would be inclined to select as rôle expectations those that would facilitate the performance of their own social rôles as supervisors. They would therefore be more likely to emphasize supervisor-employee relations than any other type of interpersonal relation that the rôle of Bantu clerk may involve.

b. *Culture.* One might expect differences in rôle expectations also because the two groups being compared belong to very different cultures, Western European and Bantu. Differences in the cultural phrasing of the clerk's rôle were therefore expected:

(1). Western European culture has widely accepted a particular stereotype of the behaviour, attitudes, and abilities proper to clerks.³ Thus the

³The rôle of the clerk in the civil service carries with it stereotyped expectations of behaviour and attitudes that have been described by Merton (13), Watson (21), and Weber (22).

expectations that white supervisors are likely to have of Bantu clerks will follow, in major outlines, the Western stereotype of a clerk, i.e., that he be submissive, equable, self-effacing, methodical, and controlled. In the non-literate, tribal culture of the Bantu, there would, of course, be no cultural rôle approximating to that of a clerk or scribe. In the process of acculturation the Western concept of the rôle of the clerk would inevitably be communicated to and gradually assimilated by the emergent middle class Bantu, but as the behaviour which it implies has no congruence with anything in the original Bantu culture it seems likely that the rôle expectations of the Bantu clerks themselves would be less stereotyped than those held by the white supervisors, and that there would be a lower degree of consensus among the members of this group than among the white supervisors.

(2). Because of differences between the child-rearing and socialisation patterns in Bantu and in Western culture, some of the qualities which a Bantu clerk is expected to acquire would be assimilated more easily and with less strain than others. Where the clerk's rôle requires the drastic denial of patterns established in childhood, and their replacement by new, unfamiliar Western patterns some difficulty will be experienced. For example, it was expected either that "accuracy" and "punctuality" would occur *more* frequently as a response among the Bantu than among the white, or that they would occur *much less* frequently, since strain in acquiring these qualities which are not characteristic of Bantu culture, would be reflected either by an excessive preoccupation with these qualities, or by a denial of them.

(3). On the basis of Cottrell's (4) hypothesis that: "Persons who are mobile from class to class, or culture to culture, have an indefiniteness of rôle expectation," it was expected that the Bantu clerks under investigation, being mobile in both class and culture, would have a low consensus in their rôle expectations.

c. *Racial stereotypes.* A third reason for expecting differences in rôle expectations was that there is a widespread acceptance in South Africa of negative stereotypes regarding the Bantu. The white supervisor's expectations of the rôle of the European clerk would differ therefore from his expectations of the rôle of the Bantu clerk because of this negative stereotype.

However, experimental work on minority groups in the United States of America and elsewhere (1) has shown that subordinate groups sometimes identify in part with the dominant group, and thus unconsciously accept some of the dominant group's attitudes towards themselves. Therefore the rôle expectations of the Bantu may echo to some extent the subordinate rôle which they know their white supervisors expect them to play.

d. *Communication.* A fourth reason for expecting differences in rôle expectations was that in bureaucratic structures communication concerning job expectations and work standards between supervisors and employees is normally poor. Furthermore where racial prejudices are present, these tend to aggravate any inadequacies in communication. It was therefore anticipated that the rôle expectations of the white supervisors would be conveyed downward to the Bantu and assimilated by them fairly readily, while the reverse process would occur only with difficulty.

2. Hypothesis II

The rôle expectations of highly rated⁴ clerks will agree more closely with the rôle expectations of the white supervisors than will the expectations of unfavourably rated clerks.

This hypothesis arises from, and aims to test a proposition formulated by Jacobson *et al.* (5, p. 26): "An effective worker is one who is able to, and motivated to meet the rôle expectations of relevant peers, superiors, and subordinates." The operational word here is "motivated" since an individual's desire to meet the rôle expectations of his superiors implies that he himself accepts his superiors' rôle expectations as a work goal toward which he aspires. These may however be minimal goals since his expectations of his rôle may extend into other areas too. Extending Jacobson's concept of efficiency, it is tentatively put forward in this paper that efficiency can be considered as the product of three sets of factors. Firstly, there should be a general measure of agreement between the rôle expectations of the supervisors and those of the person doing the job; secondly, the worker should desire to discharge his duties at a high level of effectiveness; and thirdly, he should have the necessary abilities and personality characteristics which the rôle requires.

Assuming comparable abilities and personality characteristics as well as aspiration levels, those clerks who see their rôle in terms most like their supervisors', would tend to use their abilities and personal qualities more effectively and would therefore tend to receive higher job ratings than clerks whose rôle expectations differ markedly from their supervisors.

The material discussed in this paper makes no attempt to control the part played by differences in abilities and aspiration level, but only a primary relationship is sought between rôle expectations and job efficiency ratings.

⁴The supervisors' rating used for this investigation is the *Over-all Criterion Rating*—a composite rating derived from two over-all assessments of the work performance clerk.

3. Hypothesis III

The Bantu clerk will illustrate the marginality (18) of his position by showing an awareness in his rôle expectations of the two reference groups⁵ to which he belongs, namely his primary group—the Bantu people, and his employing body—a government department, and that conflicts and ambivalence will be revealed in his attitudes toward these reference groups.

As an intermediary between state and subject, and between dominant white society and a subordinate Bantu population, he has strong bonds and primary ties with his own Bantu group; and in his occupation rôle, he is a public servant, requiring to identify himself with the administration, its explicit aims, the policy it applies, and the methods it uses.

He is therefore called upon to play an active supporting rôle in the application of administrative procedures, and since the department concerned applies regulations and policies which discriminate between white and Bantu citizens, he is placed in an aggravated marginal rôle where conflict and ambivalence are likely to occur. He cannot consistently relate himself to either of his reference groups, more particularly when issues arise where the bureaucracy and the Bantu public are not in harmony.

C. PROCEDURES

1. Subjects

The subjects for this investigation comprised Bantu clerks and their white supervisors employed by a government department in Johannesburg. The total number of Bantu clerks employed by this department numbered 57 of whom 54 were available for testing at the time of this study. Of these 54 clerks, three failed to give relevant responses to the project set and they have been excluded from this analysis. The effective sample, therefore, comprised 51.

The total white personnel of the department concerned numbered close on 120 persons of whom 62 were considered to meet the supervisory requirements for inclusion in this study. Of these, 53 supervisors coöperated with the project and gave relevant responses to the task set. The remaining nine gave various reasons for not fulfilling the requirements of the project but were clearly resistant to being included in the investigation.

2. Techniques

The technique adopted for measuring rôle expectations was to request each subject to write an unstructured short essay on the subject: "What I

⁵Reference groups are those groups to which the individual relates himself as a part, or to which he aspires to relate himself psychologically (18, p. 206).

expect from an efficient Bantu clerical worker in the—Department.” All the Bantu subjects wrote their essays in small groups of 8-10 persons at the National Institute for Personnel Research during one of many days set aside for the comprehensive testing of these subjects for the purposes of the wider study. The instructions were brief and did not structure the subject of the essay in any way and a time limit of half an hour was set. This project was undertaken after the subjects had spent several days at the Institute and were already familiar with the aims and objects of the broader study and with their surroundings. The African research officer who administered the project was well known to them since he had given the earlier tests and questionnaires and a very good relationship between him and the subjects had been established. The subjects’ responses could only be identified by means of a code number. All the clerks responded in English although they were free to use vernacular languages if they chose. The white supervisors were unfortunately unable to meet together in a group for the purpose of this study and wrote their essays in their own time either during or after working hours, but were asked to limit themselves to approximately half an hour for the fulfilment of the task set. Respondents used either English or Afrikaans.

3. *Methods of Categorising the Data*

It was necessary to translate the qualitative material collected into data which could then be subjected to a rigorous analysis. This involved the classifying, ordering, quantifying, and finally the interpretation of the verbal material supplied. In classifying the empirical material, an a priori scheme of analysis was not attempted but rather the procedure referred to by Lazarsfeld and Barton (7) was followed, namely to adapt to the “respondent’s frame of reference.” This meant that the coding and classification of the rôle expectations arose from the data themselves and were not set up in advance of the analysis.

Having coded the essays, quantification of the categorised material proceeded.

D. FINDINGS

In the discussion that follows, the term *rôle expectations* should be understood to refer to *rôle expectations of the efficient Bantu clerk*. Thus *supervisors’ rôle expectations* or *Bantu rôle expectations* will refer to how each of these criterion groups perceive the rôle of the efficient Bantu clerk.

1. *Supervisors’ Rôle Expectations*

Of all the supervisors’ rôle expectations, the interpersonal relations between the clerk and the supervisor emerge as the most important (see Table 1).

TABLE 1
BANTU CIVIL SERVANTS PROJECT: RÔLE EXPECTATIONS OF THE EFFICIENT BANTU CLERK
AS PROJECTED BY TWO CRITERION POPULATIONS—WHITE SUPERVISORS
AND THE BANTU CLERKS THEMSELVES

Rôle expectations	Bantu clerks N.A.D. (<i>n</i> =51)		White supervisors (<i>n</i> =53)		Total (<i>n</i> =104)
	No. of resp.	% of <i>n</i>	No. of resp.	% of <i>n</i>	
<i>A. Interpersonal relations</i>					
1. Respectful, obedient to European authorities	16	31.3	37	69.8	53
2. Helpful, sympathetic, kind to Bantu public	40	78.4	30	56.6	70
3. Approachable, pleasing, cheerful personality	15	29.4	5	9.4	20
4. Helpful and coöperative in general	9	17.6	5	9.4	14
5. Dignity, self-respect and self-control	5	9.8	5	9.4	10
6. Lacks aggressiveness, "touchiness," etc.	10	19.6	4	7.5	14
7. Tactful, discrete, patient	26	50.9	4	7.5	30
8. Shows "correct" behaviour outside office	4	7.8	4	7.5	8
9. Respects and is respected by his colleagues	15	29.4	—	—	15
	11	21.5	—	—	11
10. Sets an example to other Bantu	14	27.4	—	—	14
11. Treats all clients impartially					
12. Appeals to senior officials when in doubt	5	9.8	—	—	5
48.7% of R	170	31.7% of R	94		264
<i>B. Work attitudes and behaviours</i>					
1. Neat, tidy and clean	17	33.3	28	52.8	45
2. Punctual	14	27.4	27	50.9	41
3. Honest and trustworthy	16	31.3	22	41.5	38
4. Hardworking, conscientious	9	17.8	14	26.4	23
5. Sober, temperate, "clean-living"	9	17.8	14	26.4	23
6. Accurate, systematic	15	29.4	12	22.6	27
7. Reliable and responsible	12	23.5	10	18.8	22
8. A public servant who knows his duty	11	21.5	8	15.0	19
9. Ambitious, eager to learn	2	3.9	8	15.0	10
10. Shows initiative	6	11.7	8	15.0	14
11. Carries out his instructions	2	3.9	6	11.3	8
12. Enthusiastic, enjoys work	8	15.7	4	7.5	12
13. Works quickly, expeditiously	11	21.5	—	—	11
37.9% of R	132	54.1% of R	161		293
<i>C. Skills, aptitudes, and abilities</i>					
1. Intelligent, capable, well-informed	19	37.2	22	41.5	41
2. Knowledge of both European languages	7	13.7	11	20.8	18
3. Knowledge of several vernacular languages	10	19.6	9	16.9	19
4. Conversant with acts and regulations	10	19.6	—	—	10
13.2% of R	46	14.1% of R	42		88
Total responses	348		297		645

What 70 per cent of the supervisors want from Bantu clerks is "respect and obedience to the European authorities." Content analysis, along the lines discussed by Berelson (2) was applied to the particular responses classified in this category in order to determine the precise psychological emphasis placed upon this relationship. This revealed that of the 37 supervisors giving responses categorised in this area, 51 per cent of them used the word "respect," and the same number required the clerk to be "polite and courteous" while only 24 per cent emphasised "obedience."

Robert Merton has pointed out (13, p. 158) that the structure of a bureaucracy is "one which approaches the complete elimination of personalised relationships and non-rational considerations," and "... conflict within the bureaucratic structure arises from the . . . situation . . . when personalised relationships are substituted for the structurally required impersonal relationships." He is describing and analysing state structures characteristic of the German and British civil service, and it is doubtful whether the South African civil service implicitly or explicitly follows these traditions. There is considerable everyday evidence to suggest that the pattern of personal relations within the South African civil service and the techniques employed for discharging duties to the public rest on a more personal basis than those described (11, 12, 13, 22).

This requirement of the Bantu clerk that he show above all else, "respect and politeness" to his supervisors reveals the need on the part of the European for formal, explicit recognition of his higher status. Although there is no data on how a comparable, or the same group of supervisors would project rôle expectations for white clerks performing duties similar to the Bantu clerks considered here, it is thought extremely unlikely that in such a case their *most important* rôle expectation would be this need for "respect." Certainly the structural and functional properties of a bureaucracy require that respect and politeness be accorded to superiors by subordinates and that orders be obeyed, but it is suggested that these requirements appear here in a heavily overemphasised and aggravated form.

Three factors may be operating singly or in combination to produce this particular stress on "respect." Firstly, this reflects the prevailing modes of interaction between white and black in the country as a whole where white South Africans as a group tend to insist both explicitly and implicitly on formal recognition by the Bantu of the white's superior status and expect deferent and respectful behaviour from them. Secondly, this sample of white supervisors may constitute a group of persons who may themselves feel insecure in their own rôles, and their anxieties may need to be allayed and

temporarily reduced by marked signs of deference on the part of their subordinates. And thirdly, this may reflect a response on the part of these specific supervisors to a threatened or actual withdrawal of outward signs of respect and politeness. There may be an actual lack of deferential behaviour on the part of the Bantu clerks and this would make the supervisors emotionally aware that their own needs either are not being met, or *may* not be met in this area. These three factors are put forward tentatively at this stage but it is hoped that data derived from other aspects of the larger study "The Bantu Civil Servant" will throw more light on the precise dynamics of this relationship of supervisors and Bantu clerks.

Of the other *modal expectations*⁶ of the supervisors (see Tables 1 and 2), the second most important also involves interpersonal relations, namely the need for the Bantu clerk to be "helpful, sympathetic, and kind to the Bantu public." This requirement is in marked contrast to the prescribed behaviour that civil servants should adopt toward the public as described by Merton (13) and Weber (22), both of whom stress the need to minimise personal relations between the functionary and the clients and to resort to categorisation in dealing with individual cases. It is striking that this rôle expectation of the supervisors should take this special form of emphasising warm, nurturant bonds between the clerk and his clients rather than, for example, the treatment of clients with impartiality and in accordance with formal procedure. This latter rôle expectation is projected only by the Bantu group, no less than 27.4 per cent of the clerks producing this particular rôle requirement. Not one supervisor gave responses coded in this area.

The reasons why the supervisors are so markedly in agreement in requiring these *personal* signs of empathy from the clerk in his dealings with the public may be related to the reputed lack of kindness, sympathy, and understanding which the Bantu clerk shows his fellowmen. Before the field work for this study commenced, the writer held unstructured group discussions with both supervisors and Bantu clerks where each group was encouraged to talk freely about the problems of the Bantu clerk. The writer took no active rôle in initiating lines of discussion and two of the three supervisors' groups produced a considerable body of material relating to the "autocratic, overbearing, and harsh" treatment that the Bantu clerk was reputed to show toward the public and any of his subordinates. There is no overt behavioural data to support or to deny this, but there is a widespread belief both among Europeans and Bantu that the behaviour of the Bantu civil

⁶Modal expectations have been defined for the purposes of this study as those rôle expectations shared by at least 20 per cent of the members of a criterion group.

TABLE 2
MODAL* RÔLE EXPECTATIONS OF THE EFFICIENT BANTU CLERK AS PROJECTED BY BOTH GROUPS

Modal rôle expectations	White supervisors (<i>n</i> =53)		Bantu clerks (<i>n</i> =51)		Significance of difference between groups
	No. of resp.	% of <i>n</i>	No. of resp.	% of <i>n</i>	
1. Respectful, obedient to European authorities	37	69.8	16	31.3	Sig. at 1% level
2. Helpful, sympathetic, kind to Bantu public	30	56.6	40	78.4	Sig. at 5% level
3. Neat, tidy and clean	28	52.8	17	33.3	Sig. at 5% level
4. Punctual	27	50.9	14	27.4	Sig. at 1% level
5. Intelligent, capable and well-informed	22	41.5	19	37.1	Not Sig.
6. Honest and trustworthy	22	41.5	16	31.3	Not Sig.
7. Hardworking and conscientious	14	26.4	Not modal		Not Sig.
8. Sober, temperate and "clean-living"	14	26.4	Not modal		Not Sig.
9. Accurate and systematic	12	22.6	15	29.4	Not Sig.
10. Knowledge of both European languages	11	20.8	Not modal		Not Sig.
11. Tactful, discrete and patient	Not modal		26	50.9	Sig. at 1% level
12. Approachable, pleasing and cheerful personality	Not modal		15	29.4	Sig. at 1% level
13. Respects and is respected by colleagues	—	—	15	29.4	Sig. at 1% level
14. Treats all clients impartially	—	—	14	27.4	Sig. at 1% level
15. Reliable and responsible	Not modal		12	23.5	Not Sig.
16. Sets an example to other Bantu	—	—	11	21.5	Sig. at 1% level
17. "A public servant who knows his duty"	Not modal		11	21.5	Not Sig.
18. Works quickly and expeditiously	—	—	11	21.5	Sig. at 1% level

*I.e., those rôle expectations upon which at least 20 per cent of the group agree.
servant toward the Bantu public does tend on occasions to be officious, aggressive, and unfriendly.⁷

The remaining eight modal expectations of the supervisors do not reflect interpersonal relations but are largely the stereotypes of behaviour that

⁷If this is so, it raises certain interesting questions upon which it is hoped the larger study will later throw some light. Have the present group of Bantu clerks in this organisation "chosen" this occupational rôle for personality reasons or are they responding with autocratic or aggressive behaviour because of the specific social situation confronting them in fulfilling their rôle? Roe (16, p. vi) has suggested that "occupational choice can be taken as a self-categorisation, as an indication of at least some aspects of the self-image." The situational factors that may be provocative of aggressive behaviour are discussed later in this paper.

clerks are expected to display in Western society. Thus precision, reliability, efficiency, order, moral conformity, and discipline are stressed. At the personality level, it is striking that no less than five of these modal expectations are characteristic attributes of persons of anal character, namely "neat, tidy, and clean," "punctual," "conscientious," "sober and temperate, and clean-living," and "accurate and systematic."

It is important to consider those rôle expectations that receive little emphasis. Only 15 per cent of the supervisors require an efficient clerk to be ambitious or to show initiative, and no supervisor mentions "impartiality toward the clients" or the need for the clerk to be "conversant with acts and regulations." These points will be developed in a later section of the paper.

Arising from Hypothesis I, it was anticipated that a higher degree of consensus would occur among supervisors than among Bantu clerks. This is substantiated by the data since six of the supervisors' rôle expectations concur at the 40 per cent level or higher (26.1 per cent of all the rôle expectations projected by this group are included here). The comparable figure for the Bantu group is two rôle expectations (i.e., 6.9 per cent of all the rôle expectations Bantu project fall above a 40 per cent consensus).

2. *Bantu Rôle Expectations*

Almost half of the 15 modal expectations of the Bantu group are concerned with interpersonal relations. Dominating all other relationships is that of the clerk and the members of the Bantu public. The most important rôle expectation is that of being "helpful, sympathetic, and kind to the Bantu public" which is mentioned by 78.4 per cent of the group (see Tables 1 and 2). The second most important expectation also involves Bantu clients since all the 26 subjects who mention the requirement of being "tactful, discrete, and patient" specify that this behaviour is necessary or ideal for coping with the needs of the public. Only four of these subjects also specify the need for these qualities to be exercised in relation to their white supervisors. Three other rôle expectations structure the ideal requirements of a clerk in approaching the public, namely to be "approachable, pleasing, and cheerful" (29.4 per cent), "to treat all clients impartially" (27.4 per cent), and "to set an example to other Bantu" (21.5 per cent).

The Bantu clerk, therefore, sees his rôle primarily in terms of his relationship with the Bantu public and he is sensitive to the special skills and methods of approach which he should adopt in interacting with them. A court interpreter writes:

... Such a clerk is expected to be patient, very patient too, as he has to meet people of all descriptions, some intelligent who claim to profess to know better than he does, others dull and expect to have everything done for them. It is only a man of ability who will tolerate all these nasty things.

And a Grade 1 clerk expresses himself in these terms:

First and foremost I would expect to see the sign of civility from a Bantu worker of this Department. The—Department I regard as the most important, the most difficult, and the most complicated department under the Government. Civility in such a department is a real prerequisite.

However, civility pure and simple is not sufficient. Great patience is needed of a Bantu worker who has to deal with many illiterate natives. Impartiality should be his guide. In fact quite a number of qualities should be possessed by a Bantu worker. . . . But above all, a Bantu worker must have tact. To be ideally correct as a Government servant is not always conducive of good relations. A strict law may be rendered light by good administration, and administration requires intuition, foresight, and tact.

These are some of the ideal patterns toward which a clerk aspires and which he is *consciously* motivated to achieve. However psychological difficulties and conflicts get in the way of the fulfillment of these ideals.

A second grade clerk indicates the problem in these words: "I would like to see the Bantu clerk working very hard and efficiently even if tempted to be harsh by any of the members of the public, I would like him to show himself above the average in intelligence and in tolerance."

And a recorder⁸ has this to say: "Some Bantu clerks have no time or chance to explain anything to their brothers and men of their own country. I always wish that all my Bantu clerks should reform from the way they are today."

Another second grade clerk comments: "It is manners that maketh a man! If a Bantu clerical worker cannot respect his fellowmen, whom he is destined to serve, then such a worker is not worth the salt of living."

An interpreter clerk projects a similar picture:

Entering the Departmental office . . . I would expect to find a man ready to receive my complaints, or whatever my case may be, with all the patience he could exercise and explain to me with courtesy coupled with efficiency. In most cases you find able men in the Department's offices but because of being so self-conceited, some lose the real gist

⁸A recorder is the most junior of all Bantu clerical workers employed by this department.

of what is expected of them. Patience and long-suffering are of utmost importance and that's what I would expect to find in a man of this position.

Many of our Bantu clerks have, however efficient, lost favour with those at the head as well as the public as a result of their unwillingness to exert themselves for the cause of the less fortunate who come in to seek their assistance.

Another Recorder urges that the clerk "should not rush and speak harshly to the public." While a clerk suggests that when a member of the public "arriving at the administrative offices receives kicks and cuffs, this is the antithesis of the kind of clerk we would like to have in the Department."

Table 1 shows that 1.6 per cent of the Bantu criterion group expressly require the clerk "to lack aggressiveness or touchiness," and again the context of the essays makes it clear that this requirement is felt as important in relation to the Bantu public.

As indicated earlier, there may be deep-seated personality and cultural factors that produce problems amongst this particular group of clerks in effectively handling authority relations with the public at a smooth non-authoritarian level. These will be discussed in a subsequent paper. But there *are* important structural forces operative in the situation itself which lead to problems for the clerk in his dealings with the Bantu public.

Merton (13, p. 158) has pointed to a general source of conflict between the civil servant and the public which derives from the very nature of the bureaucratic structure itself:

The bureaucrat, in part irrespective of his position within the hierarchy, acts as a representative of the power and prestige of the entire structure. In his official rôle, he is vested with definite authority. This often leads to an actually or apparently domineering attitude, which may only be exaggerated by a discrepancy between his position within the hierarchy and his position with reference to the public. . . . This tension is increased by a discrepancy between ideology and fact: the governmental personnel are held to be "servants of the people," but in fact they are usually superordinate, and release of tension can seldom be afforded by turning to other agencies for the necessary service.

This is one among several situational factors that are relevant for consideration here. Another factor to be considered is the strain experienced by the Bantu public who are confronted by the application of general rules and the categorizing of their individual cases instead of a personal interpretation of their problem. Merton (13, p. 157-158) has also described this situation in the following terms:

Since functionaries minimise personal relations and resort to cate-

gorization, the peculiarities of individual cases are often ignored. But the client who understandably is convinced of the special features of his own problem, often objects to such treatment. The impersonal treatment of affairs which at times are of great personal significance for the client, gives rise to the charge of "arrogance and haughtiness" of the bureaucrat.

But quite apart from these two general features of bureaucratic structure, the Bantu clerk faces an additional and acute source of strain as a result of his position of marginality. As an intermediary between state and subject, he occupies the rôle of a public servant owing allegiance to the state. But he is also a Bantu in this country, in which rôle he is one of the subjects bound by the widespread systems of control which this department applies. As such he shares the attitudes and feelings of Bantu to these systems of control and there is little doubt that hostility is felt toward this department and its policies. He is therefore expected to identify himself with the administration while having strong emotional and affiliative ties with his own primary group, the group being administered. This dilemma must become acute when it is recognised that as a public servant he applies instruments of state policy aimed at the maintenance or extension of discriminatory practices against his own people. If he finds it difficult to identify himself consistently with his rôle as a public servant he is likely to be in a constant state of conflict, anxiety, and tension although the actual cause of this frustrating condition may be unconscious and repressed.

In such a situation, the Bantu clerk can take one of a limited number of actions. He can conform to one set of rôle expectations and take the consequences of non-conformity to the other. Thus he can identify as fully as possible with the administration and accept any negative sanctions applied against him by his own people, thus making him a possible object of suspicion, hatred, and rejection and stimulate his need to express a retaliatory and compensatory aggression and harshness toward his fellowmen. Or he can identify with his own people and fail to serve the administration whole-heartedly, with integrity and loyalty, thus risking the loss of his job and the demoralisation that comes with a lack of belief in what one is doing.⁹

A second alternative solution to the clerk's dilemma would be to conform in part, though not wholly, to both rôle expectations in the hope that the sanctions applied against him will be light. As a result of such a compromise, conflict and ambivalence are likely to be experienced toward his own people

⁹In this connection Warren (20) has suggested that much of the social disorganisation involving corruption in public office arises from the conflicting demands of a primary group to which the official belongs, on the one hand, and on the other hand those involving his allegiance to his employing body.

and toward the administration. Amongst other things this situation would produce alternately behaviour that showed fear and anger toward the Bantu public thus giving expression to his own inner resentments at the situation in which he finds himself. And at other times, this resentment and hostility against the administration would be given expression in probably more covert form such as dishonesty, lack of integrity, working slowly or inefficiently, etc.

The third solution for the clerk would be that he finds the situation unbearable and leaves the job or deliberately invites dismissal.

Supportive evidence for the conflicts faced by the Bantu clerks comes from the analysis of responses to an incomplete sentence test¹⁰ which read: "A clerk works for the government. . . ." This item was used to ascertain the stereotypes that Bantu held toward the Bantu civil servant clerk and results show that almost a fifth of those Bantu who were not themselves civil servant clerks responded with "is conflicted in his conscience, regarded as a traitor to his people, feared and hated." The government clerk however, gave a different response and his most important emphasis lay on "has high status, commands respect, etc." Since these same clerks, when responding to other questions in this questionnaire showed strikingly little concern with status, either as a source of job satisfaction or as a job grievance, and in fact since they rated the status of a clerk relative to other urban middle class occupations very low indeed, it is suggested that their response here shows that they are repressing an awareness of the hostile feelings felt by others toward them, and as a defence mechanism a classic reaction-formation takes place.

An example of how this rôle conflict manifests itself at the conscious level occurs in an essay by a recorder:

An efficient clerical worker should be sympathetic to his people whenever they come to his office, make them feel that they are at home, take away all fears that they will be arrested and that it was at this government place that they can be arrested at any time. Make these people feel that the . . . Department is the only place for refuge where they are free to express themselves and also their grievances. But meanwhile be at the level of these people, because if you do not do so then they will start saying that this is no place for natives or Bantu.

By contrast with the primary importance that the Bantu public assumes in the rôle expectations of the Bantu group, "respect and obedience to Euro-

¹⁰This item was included in a questionnaire of structured, unstructured, and projective-type questions administered to nearly 400 Bantu professional and clerical workers in Johannesburg in 1955. It was one of the techniques employed in the larger study of "The Bantu Civil Servant."

pean supervisors" occupies a relatively unimportant place. Whereas 78.4 per cent of the Bantu project the rôle expectation of "helpful, sympathetic, and kind to the Bantu public," only 31.3 per cent of the members mention "respectful and obedient to European supervisors." It is interesting that the rôle expectation "respects and is respected by his colleagues" has about the same importance as "respect for supervisors" since 29.4 per cent of the group concur on this rôle expectation. A content analysis of the category to be "respectful and obedient to European supervisors" revealed that 75.0 per cent of the Bantu responding with material in this category use the word "respect" and 25.0 per cent use the word "obedient."

A Bantu proverb "If you want respect you must pay respect" suggests that the clerk wishes to be respectful to the public, his supervisors, and his colleagues and anticipates a reciprocal expression of respect in return. There is no evidence in these rôle expectations to suggest that the supervisory relationship is of any greater importance to the clerk than his collateral relationships with colleagues. It is a reasonable inference from this to conclude that anxiety is not experienced on the part of the clerk that lest he show constant attention to, and deference toward his supervisors, his job may be imperilled. This confirms other motivational data which were derived from the questionnaire mentioned earlier, showing that the Bantu civil servant, in contrast to other professional and clerical Bantu, feels more secure in his job and this job security is an important source of satisfaction to him. In fact he feels that "maximisation of vocational security" which Merton (13, p. 152) has described as being characteristic of a bureaucracy.

Apart from the rôle expectations involving interpersonal relations of the clerk with the public, his supervisors or his colleagues, the remaining nine modal expectations are concerned with two different types of requirement. The first reflects the stereotypes of work behaviour that clerks are expected to display, such as accuracy, reliability, efficiency, intelligence, punctuality, and working quickly and expeditiously. The second set of requirements concern the special attitudes and actions of the *civil servant* clerk, e.g., "treats all clients impartially," "a public servant who knows his duty" and "conversant with acts and regulations."¹¹

Certain striking differences between the Bantu criterion group and the supervisors' group occur in respect to "working quickly and expeditiously"

¹¹This expectation was projected by 19.6 per cent of the Bantu group and is therefore not a modal expectation in terms of our definition. However it is so near to fulfilling the arbitrary criterion established, and since it is convenient to consider this expectation here it has been listed along with the other two in this general area.

and to the requirements specific to a *civil servant* clerk. These will be discussed in the following section.

Rôle expectations of the Bantu show that "being ambitious" or "showing initiative" is significantly low, even lower than comparable expectations of the supervisors—(3.9 per cent and 11.7 per cent respectively for the Bantu group and 15 per cent and 15 per cent for the supervisors' group).

3. *Comparison between the Rôle Expectations of Both Criterion Groups*

Agreement in the rôle expectations projected by both of the criterion groups occurs more often than disagreement but the areas in which disagreement occurs are those invested with more importance by either or by both of the groups. It is largely in the sphere of *Interpersonal Relations* (see Tables 1 and 2) that the most severe conflict in rôle expectations is revealed since only four of these are in substantial agreement (but none of these are modal expectations for either group) and eight expectations differ significantly at the 5 per cent or 1 per cent level of significance (and seven of these are modal for one group or the other). Rôle expectations in the sphere of *Work Attitudes and Behaviour* show a reverse trend, however, since agreement is markedly more important than disagreement (10 of the 13 categories are in agreement and six of these are modal expectations for one or other group). But where disagreement occurs it is important. (Three rôle expectations differ of which two are at the 1 per cent level of significance and the other at the 5 per cent level, and all three of these are modal for one or the other group). Disagreement is unimportant in the third sphere *Skills, Aptitudes, and Abilities*.

What then are the major specific sources of rôle conflict between the two criterion groups? The largest difference occurs in respect of the category "to be tactful, discrete, patient" which is invested with great importance by the Bantu and figures only insignificantly in the responses of the supervisors. It will be remembered that as a consequence of the different status positions occupied by the supervisors and the Bantu clerks in this organisation, it was anticipated that the clerk would project a picture of his whole psychological field from a central position, and thus include all his interpersonal relations. The supervisors on the other hand as a consequence of their rôle relative to their subordinates, were expected to emphasise supervisor-employee relations more than any other interpersonal relations that the rôle of the clerk might involve. Thus the clerks need to be "tactful and discrete" in relation to the Bantu public would receive very little attention from the supervisors as a result of these status differences. This tendency

would be further reinforced by the "social distance" which MacCrone (10) has shown separates white from black in this country and which would tend to make the supervisors largely unaware of, and indifferent to, the particular types of interpersonal contact established between Bantu themselves and the effects on the Bantu public of different modes of approaching them.

The second most important statistical difference between the groups occurs in the rôle expectation "to be respectful, obedient to the European authorities" where the supervisors stress this more than any other requirement and where the Bantu place it only sixth in importance. (A difference of 38.5 per cent occurs between the responses of the two groups—this is significant at the 1 per cent level.) Here is a conflict in rôle expectations since the Bantu clerk considers respect to be part of his rôle requirements but accords no special degree of emphasis to respecting his supervisors.

The third and fourth most important differences occur where the Bantu are concerned with good relations with their colleagues and clients and the supervisors are wholly indifferent to these requirements. This confirms the hypothesis advanced at the beginning of this paper that differences in field position would produce this type of variation in the response of both groups. And the comments made above on "social distance" would be relevant here too.

Another important difference occurs in those rôle expectations that are orientated towards time. The supervisors stress "punctuality" much more than do Bantu clerks which accords with Hypothesis I where it was anticipated that there would be a difference in this area as a result of cultural factors. (However the prediction concerning differences in respect of "accuracy" did not occur.) The other expectation where a striking difference occurs is "to work quickly, expeditiously" where there is a significant absence of any categorised response in this area from the supervisors.

As products of Western culture where so many activities are geared to the clock, and as supervisors responsible for the work of the Bantu who traditionally placed little or no emphasis on the speed of any performance, one might have anticipated that supervisors would stress this requirement very heavily indeed. The absence of any expectation that efficient clerks should work quickly might be due to the particular institutional structure and function of a bureaucracy which may not be geared to speed as much as would an industrial organisation where "time is money." In the civil service, accuracy and general technical efficiency are likely to be more highly valued than the time taken for any operation. The lack of any response in this area by the supervisors suggests, furthermore, that whatever *are* the speed requirements of work for the Bantu clerk, they are being well met. If this were

not the case it is to be expected that the supervisors would be consciously aware of the lack of satisfaction given by Bantu clerks in this area, and that rôle requirements for "working expeditiously" would then be consciously formulated and expressed in the essays contributed.

The relatively high emphasis on speed of work as a rôle expectation which the Bantu group projects is in line with theoretical considerations. Undoubtedly, acculturation processes create severe problems of emotional adjustment (3). Strain is experienced more particularly when habits established early in life have to be modified or replaced by contrary behaviour. The strong emphasis on time and speed, so characteristic of Western society, contrasts vividly with the more leisurely and unpressured ways of the past cultural traditions of the Bantu. However, overt changes in their behaviour relative to time factors, may occur without corresponding changes in the internalized system of values. So that for the Bantu, cultural adaptation to Western standards of time and speed may bring a period of internal tension and emotional stress. For the European, however, these time pressures form part of their early childhood training and would seldom be consciously realised or explicitly formulated since conformity in these areas would proceed smoothly and without emotional strain.

The stress on "working quickly" may also result from the direct contact which the Bantu clerk has with the Bantu public. The clients wait often in long queues, and may sometimes even wait for the greater portion of a day. They are most likely to exert overt pressure on the Bantu clerks who serve them since they too are under pressure from their employers to return as promptly as possible. The Bantu clerk, therefore, is aware of pressure from his own reference group, the public, and also sensitive to the general pressures operative within the wider society to be time-conscious and to expeditiously discharge his duties. The supervisors, on the other hand, are not so directly or personally affected by the pressures brought by the Bantu public, since face-to-face contact, where it occurs, is structured as a super-ordinate-subordinate situation.

The supervisors put a great deal of emphasis on being "neat, tidy, and clean" and rôle requirements in this area rate third in importance for their group. It is not unexpected that Europeans lay a heavy stress on these qualities since part of the negative stereotype that white South Africans hold in connection with Bantu is that they are "dirty" (10). Holding this stereotype, the supervisors fear that the Bantu clerk may fall short in these areas and stress it heavily. The Bantu group project this same rôle requirement but less clerks mention it. (The difference between the criterion

groups is significant at the 5 per cent level.) However it still ranks fourth in importance for the Bantu group as a whole. It is possible that this rôle expectation is not only a reality requirement of a job in the public service but also reflects a partial identification with the negative stereotype held by the dominant group toward the Bantu (1).

An important feature of the series of rôle expectations projected by the Bantu is the fact that so many of the separately categorised expectations reveal a consciously formulated awareness of the rôle of a public servant. There are striking differences between the criterion groups in this respect since the supervisors fail to give any responses to three separately categorised items which deal with ideal standards for the public servant and which occur among the Bantu responses.

The Bantu group conceive of the efficient civil servant as ideally following regularised procedures in the performance of official duties, without regard to external pressures. In fact they reveal a clear awareness of the ethos of the public servant, showing conformity in their attitudes to generally accepted patterns of behaviour currently held as ideal for the public service. There is certainly no evidence of "cultural deficiency" in these areas since the Bantu appears to have mastered, and to be able to reproduce spontaneously the professional standards to which the civil servant aspires. Whether overt behaviour conforms to these ideal standards is quite a different problem but it has been a question in the minds of some social scientists in this country whether the Bantu professional worker experiences difficulty in *acquiring* and wholly assimilating the professional ethos of his chosen occupational field. In many professional spheres these codes and ideals are unspoken, implicitly felt and silently shared and it is only when the code is violated that the professional group becomes aware at the conscious level of its own ideal standards. Since these ideals are best transmitted by close professional and working associations, and since these are severely limited by the prejudices and social conventions surrounding easy informal contact between black and white, it was thought likely that the learning of professional codes by the Bantu was hampered. As far as the Bantu civil servant is concerned, the evidence from this study is clear. There is a great stress placed by the Bantu group on ideal standards of public service. They are consciously aware of these codes and procedures and can elaborate upon them. Each requirement for an efficient public service enumerated and discussed by Merton (13, p. 152) is projected in clear form by the Bantu group. "The chief merit of bureaucracy," writes Merton, "is its technical efficiency with a premium placed on precision (see rôle expectation 'accurate, systematic'), speed (see

'works quickly, expeditiously'), expert control (see 'appeals to senior officials when in doubt'), continuity, and discretion (see 'tactful, discrete, patient') . . . a keen sense of the limitations of one's authority and competence (see 'appeals to senior officials when in doubt,' 'conversant with acts and regulations,' and 'a public servant who knows his duty'), and methodical performance of routine activities (see 'accurate, systematic,' 'hardworking, conscientious,' 'reliable, responsible')." Merton writes also of the need for the bureaucrat to use categorisation of individual cases (see "treats all clients impartially" and "conversant with acts and regulations").

Since three of these rôle expectations are projected by the Bantu group only, it seems useful to investigate why the supervisors failed to give any material in the following areas: "treats all clients impartially," "conversant with acts and regulations," and "appeals to senior officials when in doubt." Since 27.4 per cent, 19.6 per cent, and 9.8 per cent of the Bantu group gave responses in these three areas, the absence of supervisors' expectations is significant. One possible explanation for this may be that the white supervisors' ideas of Bantu clerks are influenced by the prevailing stereotypes of what the Bantu is thought to be capable of and what he should be allowed to do, in order that his subordinate rôle in the country as a whole be maintained. To demand that the Bantu think and behave as an ideal civil servant means in effect, that he be allowed to subscribe to the same values and ideal standards that the supervisors hold themselves, since they too are civil servants. This may be psychologically more than this group of white supervisors can accept.

Another important area where the responses of the two criterion groups differ is in the relative stress which each group accords to *Interpersonal Relations* and expectations involving *Work Attitudes and Behaviour* (see Table 1). The Bantu stress rôle requirements in *Interpersonal Relations* more than those involving *Work Attitudes and Behaviour* and the white supervisors give a reverse distribution. (Differences are significant at the 1 per cent level.) The Bantu group displays a sensitivity to, and awareness of the quality of interpersonal relations, they make fine verbal differentiations between one type of interpersonal relation and another, and they provide descriptions of the personal attitudes necessary to maintain pleasant relations with others. Thus they appear to be motivated by a profound interest in interpersonal relations and invest this area of human activity with a great deal of emotional importance.

It is possible that the foundation of these attitudes springs from the original Bantu tribal culture with its wealth of kinship connections which pro-

vides a pattern for the wide differentiation of all personal relations. The small child learns that each of the first persons with whom he comes into contact has a particular kind of relation to him which arises from his genealogical position. As Redfield describes it, writing on the general characteristics of an ideal type of primitive or folk society (15, p. 301):

The individual finds himself fixed within a constellation of familiar relationships. The kinship connections provide a pattern in terms of which, in the ideal folk society, all personal relations are conventionalised and categorised. All relations are personal. But relations are not, in content of specific behaviour, the same for everyone. . . . The kin are the type persons for all experience.

Such child training and socialisation procedures sensitise individuals to personal relations in general, and make them consciously aware of each type of social relation in which they are involved and enable them to differentiate at the conscious level between varieties of behaviour appropriate to each social relationship. As a result of acculturating processes, it is probable that the essential form and quality of the social interaction *may* remain substantially the same but the referents change and become more numerous and confused. Thus "colleagues" and "the Bantu public" most certainly include a vast majority of persons who lay outside the immediate kinship group or its extensions, but early childhood patterns of social interaction can still be called into play. In a real sense all Bantu are "kin" to each other in the setting of a European-dominated authority structure, for although finer tribal and kinship differentiations still occur within the Bantu group itself, the group as a whole is operating in a situation which encourages Bantu to feel united as an in-group.

There would therefore be appropriate attitudes and behaviour for relations not only with each kinship category, but for those wider cross-tribal groupings and from these early patternings it is likely that the relations of the clerks with the Bantu public and their colleagues derive.

The all-pervasive and profound effects of the kinship structure would certainly affect even those Bantu who were born and bred in the city.¹² And that such learning of kinship connections with their appropriate behaviour patterns would produce the emphasis on interpersonal relations presented here.

The *range* of rôle expectations projected by the Bantu group is greater than that projected by the supervisors, since all the separately categorised

¹²Of this sample of Bantu clerks, 14.5 per cent were born in the city and have lived there all their lives, and a further 22.9 per cent have spent more than three-quarters of their life span in an urban environment.

expectations that occurred among the responses of the supervisors were also projected to some degree in the Bantu's responses. However the reverse situation did not apply and six separately categorised rôle expectations, derived from the Bantu's responses had no parallel among the essays of the supervisors.

A final point that requires mention is that consensus does occur in certain significant areas. Important areas where agreement occurs between the two groups are those requiring the clerk to be honest, hardworking, and conscientious, sober and "clean living," accurate, reliable, and responsible, intelligent, have a knowledge of both European languages and to be a dutiful public servant. Consensus also occurs between the groups on *unimportant* qualities for the job such as ambition, initiative, enthusiasm, and work enjoyment. Neither group expects these qualities from the efficient Bantu clerk.

4. *The Rôle Expectations of Highly Rated Clerks*

Earlier in this paper job efficiency was defined as the combination of three sets of factors. Firstly there should be general agreement between the supervisors' expectations of a rôle and those of the individual fulfilling the rôle. Secondly, the worker should have a moderately high aspiration level to discharge his rôle effectively; and thirdly he should possess the abilities, skills, and personality characteristics which this rôle requires. This paper is only concerned with data relating to the first of these factors, the relationship between job efficiency (as measured by supervisors' ratings) and the rôle expectations of the clerks. If rôle expectations *are* significant in the determination of efficiency, then a positive relationship between these two variables should occur even though the influence of the other two factors is left uncontrolled, since it is extremely unlikely that any of the factors would be *negatively* correlated.

How then, do those clerks who receive high job ratings from their supervisors think of their rôle compared with clerks with low ratings? Do they differ significantly and if so, in what specific ways? Is there any tendency for clerks who receive high job efficiency ratings to agree more closely with the supervisors' conception of their rôle than do clerks with low efficiency ratings?

Within the scope of this limited enquiry, certain personality characteristics and attitudes are the only rôle expectations that serve to distinguish one group of clerks from another (see Table 3). Highly rated clerks stress being "helpful and coöperative" while unfavourably rated clerks fail to stress being "tactful, discrete, and patient" as much as the other group. (The

TABLE 3
RÔLE EXPECTATIONS OF THE EFFICIENT BANTU CLERK AS PROJECTED BY CLERKS WITH HIGH AND LOW SUPERVISORY RATINGS

Rôle expectations	Bantu clerks with most favourable ratings (n=14)		All other Bantu clerks (n=37)		Total (n=51)		Bantu clerks with least favourable ratings (n=10)		All other Bantu clerks (n=41)	
	No.	%	No.	%	No.	%	No.	%	No.	%
<i>A. Interpersonal relations</i>										
1. Respectful, obedient to European authorities	4	28.5	12	32.4	16	31.3	2	20.0	14	34.1
2. Helpful, sympathetic, kind to Bantu public	10	71.4	30	81.0	40	78.4	8	80.0	32	78.0
3. Approachable, pleasing, cheerful personality	1	7.1**	14	37.8**	15	29.4	1	10.0*	14	34.1*
4. Helpful, coöperative in general	5	35.7*	4	10.8*	9	17.6	2	20.0	7	17.1
5. Dignity, self-respect, self-control	1	7.1	4	10.8	5	9.8	1	10.0	4	9.7
6. Lacks aggressiveness, "touchiness" etc.	2	14.2	8	21.6	10	19.6	2	20.0	8	19.5
7. Tactful, discrete, patient	8	57.1	18	48.6	26	50.9	3	30.0*	23	56.0*
8. Shows "correct" behaviour outside office	—	—	4	10.8	4	7.8	1	10.0	3	7.3
9. Respects and is respected by colleagues	4	28.5	11	29.7	15	29.4	2	20.0	13	31.7
10. Sets an example to other Bantu	2	14.2	9	24.3	11	21.5	1	10.0	10	24.3
11. Treats all clerks impartially	5	35.7	9	24.3	14	27.4	1	10.0	13	31.7
12. Appeals to senior officials when in doubt	2	14.2	3	8.1	5	9.8	—	—	5	12.1
<i>B. Work attitudes and behaviour</i>										
1. Neat, tidy and clean	5	35.7	12	32.4	17	33.3	4	40.0	13	31.7
2. Punctual	5	35.7	9	24.3	14	27.4	3	30.0	11	26.8
3. Honest and trustworthy	5	35.7	11	29.7	16	31.3	2	20.0	14	34.1

TABLE 3 (continued)

Rôle expectations	Bantu clerks with most favourable ratings (n=14)		All other Bantu clerks (n=37)		Total (n=51)		Bantu clerks with least favourable ratings (n=10)		All other Bantu clerks (n=41)	
	No.	%	No.	%	No.	%	No.	%	No.	%
4. Hardworking and conscientious	2	14.2	7	18.9	9	17.8	3	30.0	6	14.6
5. Sober, temperate, "clean-living"	4	28.5	5	13.5	9	17.8	1	10.0	8	19.5
6. Accurate and systematic	5	35.7	10	27.0	15	29.4	4	40.0	11	26.8
7. Reliable and responsible	3	21.4	9	24.3	12	23.5	3	30.0	9	21.9
8. "A public servant who knows his duty"	5	35.7	6	16.2	11	21.5	3	30.0	8	19.5
9. Ambitious, eager to learn	1	7.1	1	2.7	2	3.9	1	10.0	1	2.4
10. Shows aptitude	2	14.2	4	10.8	6	11.7	1	10.0	5	12.1
11. Carries out his instructions	—	—	2	5.4	2	3.9	1	10.0	1	2.4
12. Enthusiastic, enjoys work	1	7.1	7	18.9	8	15.7	1	10.0	7	17.1
13. Works quickly, expeditiously	4	28.5	7	18.9	11	21.5	2	20.0	9	21.9
C. Skills, aptitudes, and abilities										
1. Intelligent, capable, well-informed	6	42.8	13	35.1	19	37.1	2	20.0	17	41.4
2. Knowledge of both European languages	1	7.1	6	16.2	7	13.7	3	30.0	4	9.7
3. Knowledge of several vernacular languages	1	7.1	9	24.3	10	19.6	3	30.0	7	17.1
4. Conversant with acts and regulations	2	14.2	8	21.6	10	19.6	2	20.0	8	19.5

**Difference significant at 1 per cent level. *Difference significant at 5 per cent level.

responses to being "approachable, pleasing, and cheerful" reveal an unclear trend since both high rated and low rated clerks give lower responses than medium rated clerks.)

When comparing the expectations of highly rated clerks with those of their supervisors (see Table 4) we find that these clerks tend to lay as

TABLE 4
MODAL RÔLE EXPECTATIONS OF THE EFFICIENT BANTU CLERK AS PROJECTED BY EUROPEAN SUPERVISORS COMPARED WITH THE RÔLE EXPECTATIONS OF CLERKS WITH THE MOST FAVOURABLE SUPERVISORY RATINGS

	White supervisors (<i>n</i> =53)		Bantu clerks with most favourable ratings (<i>n</i> =14)		All other Bantu clerks (<i>n</i> =37)	
	No.	% of <i>n</i>	No.	% of <i>n</i>	No.	% of <i>n</i>
1. Respectful, obedient to European authorities	37	69.8	4	28.5	12	32.4
2. Helpful, sympathetic, kind to Bantu public	30	56.6	10	71.4	30	81.0
3. Neat, tidy, and clean	28	52.8	5	35.7	12	32.4
4. Punctual	27	50.9	5	35.7	9	24.3
5. Intelligent, capable, and well-informed	22	41.5	6	42.8	13	35.1
6. Honest and trustworthy	22	41.5	5	35.7	11	29.7
7. Hardworking, conscientious	14	26.4	2	14.2	7	18.9
8. Sober, temperate, "clean-living"	14	26.4	4	28.5	5	13.5
9. Accurate and systematic	12	22.6	5	35.7	10	27.0
10. Knowledge of both European languages	11	20.8	1	7.1	6	16.2

much if not more stress than do the supervisors on qualities of intelligence, honesty, and sobriety. There is a reverse trend however, in connection with "hardworking, conscientious," and "knowledge of both European languages" where the higher the clerk is rated the more he minimises the importance of these factors compared with the supervisors' group.

Analysing the responses of the least favourably rated clerks, they show a lesser emphasis on being "tactful, discrete, and patient" than any other group of clerks, and also put less stress on being intelligent, honest, trustworthy, and sober. They emphasise more than other clerks do, however, the necessity for "knowledge of two European languages," "being hardworking and conscientious," "neat, tidy, and clean" and "accurate." Furthermore there is a tendency for them to stress being "respectful, obedient to European authorities" less than any other group (see Table 3).

Bringing these findings into relation with each other, a general impression is gained of high rated clerks striving to be personally helpful, pleasant, tact-

ful, and discrete while aiming at the exercise of their intelligence and conformity to moral standards. They do not stress a need for special respect for the supervisors and there is no evidence to suggest more subservience or deference in their relations with their supervisors than is shown by the rest of the group.

The least favourably rated clerks give a picture of persons striving to conform to certain external aspects of the job situation rather than to its essential spirit. Outwardly they are interested in acquiring proficiency in two European languages, showing evidence of conscientiousness, hard work, and accuracy, and paying special attention to their appearance. They are less motivated toward the expression of tactful, discrete behaviour, and display the least concern with respect to their authorities than do any other group of clerks.

In conclusion it should be noted that there is no clear tendency for highly rated clerks to conform more closely to the European supervisors' modal expectations. Six of their responses to the 10 modal expectations (see Table 4) are closer to those of the supervisors' and four are less close.

With a more detailed type of analysis allowing for factors of ability, personality, and aspiration level to be controlled, rôle expectations may emerge as more closely related to job ratings than this preliminary analysis suggests.

E. APPLICATION OF FINDINGS TO HYPOTHESES

The data presented confirm and support Hypothesis I:

that the rôle expectations of the efficient Bantu clerk, as perceived by the two criterion groups, white supervisors and Bantu clerks, will differ from each other both in the relative importance which each group attributes to the qualities selected, and in the range of qualities selected.

The Bantu group gives a greater range of separately categorized rôle expectations than the supervisors' group and the two groups differ substantially in the importance they attribute to certain of the more significant rôle expectations. Rôle expectations involving Interpersonal Relations were not only shown to be the most important focus of disagreement between the two groups, but the Bantu group seemed to be especially concerned with personal relationships in their conception of their rôle whereas the supervisors' group put more stress on Work Attitudes and Behaviour.

The psycho-social reasons for these differences in rôle expectations were explored and the original arguments advanced to support the hypothesis were substantially sustained and confirmed. Thus evidence was presented to illustrate the part played by status differences between the two criterion groups

and their resultant effects on rôle expectations. Each group was shown to represent his rôle in terms of his psychological field position and rôle expectations arising from differences in psychological field position occurred as predicted.

The sub-hypothesis that as a result of cultural factors supervisors' rôle expectations would be more stereotyped than the Bantu's, would show a higher level of concensus and produce a lesser range of expectations, was fully confirmed. Evidence of strain experienced in the process of acculturation was afforded by the higher stress given by the Bantu group to "working quickly." The prediction of differences between the groups in respect to "accuracy" was, however, not fulfilled.

Cultural and class mobility was expected to be related to low concensus among the Bantu and this was fully borne out by the weight of evidence presented.

It was furthermore expected that the data presented would reveal existing patterns of race relations and prevailing stereotypes of the Bantu. The excessive concern of the supervisors for "respect, politeness, and obedience" reflects the prevailing white-black relations in the country as a whole, and it was suggested that one reason for the supervisors' concern for the clerk to be "neat, tidy, and clean" was his acceptance of a prevailing negative stereotype of the Bantu and his fear lest the Bantu be deficient in these respects.

The general lack of communication between supervisors and Bantu clerks suggested the sub-hypothesis that the flow of ideas concerning the job would be from superordinate levels downwards rather than from the clerk upwards to his superiors. This was fully substantiated by the data which showed that all the rôle expectations projected by the supervisors were shared to some extent by the Bantu group, but the reverse did not apply.

There was no confirmation of Hypothesis II:

that there will be a tendency for the rôle expectations of highly rated clerks to agree more closely with the rôle expectations of the white supervisors than will the expectations of unfavourably rated clerks.

It is however, still an open question as to whether in a more finally controlled study where variables relating to abilities, skills, personality characteristics, and aspiration level are all controlled, the rôle expectations may emerge as more positively related to supervisors' ratings.

There is evidence in the material presented to fully confirm Hypothesis III:

that the Bantu clerk will illustrate the marginality of his position by

showing an awareness in his rôle expectations of the two reference groups to which he belongs, namely his primary group—the Bantu people, and his employing body—a government department, and that conflicts and ambivalence will be revealed in his attitudes toward these reference groups.

Of the two, the evidence suggests that the Bantu's primary concern is with his own primary group. However there are strong pressures operative to encourage the clerk to be a good public servant, loyal to his employing body, and prepared to apply the policies it adopts with impartiality and fairness. Illustrative material was given to show how the marginal rôle produces conflict in carrying through either rôle whole-heartedly.

F. SOME IMPLICATIONS OF THIS STUDY

The findings presented in this study have certain implications which can be briefly indicated:

1. *Sources of Tension, Conflict and Integration Within the Organisation*

Where the rôle expectations of both groups differ markedly from each other potential sources of strain in the organisation itself are revealed. These require further investigation and means must be found for reducing major sources of conflict in rôle expectations, otherwise these will affect efficiency. When the expectations of supervisors are not met because the clerks are expending their energies on activities that are of little relevance to their supervisors there is a loss to the organisation at two levels. If the expectations of the supervisors are *legitimate* work requirements of the organisation, then productivity is reduced if there is only a partial fulfillment of these work requirements. On the other hand if the clerks are using their abilities and skills in areas which do not form part of the rôle expectations of their supervisors, their efforts will go unrewarded and this will affect the morale and aspiration levels of the clerks which will in turn affect their work performance generally.

Each major source of imbalance in rôle expectations requires objective analysis and appraisal to establish whether supervisors or clerks require opportunities for restructuring their rôle expectations, or whether changes in the organisational structure or working arrangements are necessary. For example, the supervisors' stress on "respect for European authorities" may be disproportionately high and not related to the best interests of organisational efficiency especially so since "intelligence and capability" were only rated fifth as requirements for the rôle of efficient clerk and "respect" was

given a top ranking. This suggests that supervisors need opportunities for re-evaluating the importance of the rôle expectation of "respect" relative to other requirements of the clerk's rôle.

It may be suggested that the Bantu clerks in this organisation give too little emphasis to "respect for European authorities" in their rôle expectations. However there is evidence to show¹³ that relative to other middle class Bantu in Johannesburg, these clerks feel more positive toward their supervisors than do any other occupational group sampled. Thus it is unlikely that the Bantu clerks require to stress "respect for European authorities" more but rather that organisational efficiency requires that the supervisors stress it less relative to other work requirements.

Three other potential sources of strain were revealed in the course of this study. Firstly, the marginal rôle of the clerk requires to be more fully appreciated by the supervisors and the clerks themselves must be helped to give it *conscious* recognition. The effects on job efficiency of the conflicts engendered by this marginal situation of the clerks require full investigation and steps will need to be taken to deal with the strains experienced. Secondly, the clerks' preoccupation with "working quickly," will require further investigation to determine whether organisational changes such as additional staff, etc., are indicated. And thirdly, there is need for supervisors to recognise the high standard of public servant ideals which the clerks stress and which are largely absent from the rôle expectations of the supervisors. Attempts should be made to re-inforce these ego-ideal standards in the clerk while recognising and attempting to reduce the negative forces acting against them.

In addition to sources of potential conflict in the organisation, the study revealed considerable evidence of integration since rôle agreement was high on the work abilities required for good job performance, the social controls necessary for effective functioning, and the importance of social conformity.

2. *Understanding the Attitudes of Supervisors and Clerks*

This study has provided insight into some of the attitudes which supervisors and clerks hold and which will have a direct bearing on problems of

¹³As part of the questionnaire described earlier, nearly 400 clerical and professional Bantu were asked: "What kind of relationship exists between you and your supervisor?" The group of 57 clerks described in this paper gave the highest proportion of unqualifiedly positive responses of all the 205 clerks included in the total sample, and the clerks as a whole gave more positive responses to this question than did the professional workers. The actual percentages for this group of clerical workers are: Unqualifiedly positive relationship, 63 per cent; partly positive and partly negative, 22 per cent; wholly negative, 15 per cent.

human relations in this organisation. These will be more fully explored in the larger study.

When the efficiency ratings made by the supervisors on the clerks' work are considered in relation to the rôle expectations of these same supervisors it is open to question whether these ratings do in fact assess work performance or whether they mainly reflect the kind of personal relationship that exists between the clerk being rated and his supervisor. The evidence suggests that there is likely to be a strong bias in favour of the clerk who is submissive, deferent, and respectful.

3. *Personnel Selection*

From this study of rôle expectations hypothetical personality models can be constructed which would indicate the characteristics of Bantu clerks who could function most freely and effectively in this organisation, and these could then be used for establishing selection procedures. Apart from the abilities and skills required for effective job performance on which the two groups are largely in agreement, certain personality features for the ideal clerk have clearly emerged, such as the capacity for sustaining two important types of personal relationship which differ fundamentally from each other. In his relations with the Bantu public, the clerk needs to be nurturant and kind while avoiding deep emotional involvement with his clients, while his relations with authority figures should be based on clearly defined rôles of dominance and submission and he should be able to accept authority as absolute. The problems raised by the counter-aggression and hostility that this subservience would conceal, and those arising from conflicts related to his marginal situation are very important and cannot be dealt with in this paper, but will have to be faced as one of the central problems affecting the morale and efficiency of the Bantu clerk.

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SELF-INTERPRETATIONS OF GROUP DIFFERENCES IN VALUES (NATAL, SOUTH AFRICA)*

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A. INTRODUCTION

Sociologists like K. Mannheim (5, 6) have given many illustrations of the association between the social position of a group and its view of social structure and social causation. While there can be no doubt of the importance of such "ideological" differences empirical methods for their investigation are not well developed.

In order to assess the views which the major social groups have of themselves and of their relation with each other, two steps seem to be required. In the first place it is necessary to establish factually an important and real difference between the groups, and secondly, this difference should be presented for explanation separately by the members of each group. In the course of such explanations differences of "social theory," that is to say, varying views of the relationship of the groups to each other are likely to manifest themselves.

In the present investigation we utilized two groups from South African society which has an exceptionally rigid stratification along racial lines. The political, economic, and social position of white and non-white groups is very different and no crossing from one group to another is legally possible. The non-white population is effectively disenfranchized and as a group its economic position is far below that of the white group. No equality of economic, educational, or cultural opportunity exists. If differences of social position lead to differences of social theory this ought to be evident in these groups.

The subjects in the present investigation consisted of 32 white and 36 non-white students attending segregated introductory psychology courses at the University of Natal. The non-white group included 19 Indians and 17 Africans. The socio-economic level of the white group as a whole was considerably above that of the non-white group. No social contact of any sort occurred between the two groups who attended classes in different parts of the town.

In order to assess any differences in the views of social determination put

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forward by these two groups they were asked to interpret certain differences in values between their own and the other group which had been established in a previous investigation.

B. PROCEDURE

The investigation was conducted in two stages. In the first stage the subjects were required to write an autobiographical essay and to answer six open questions. The main results of this part of the study were communicated to the subjects one to three months afterwards and they were then required to write down their interpretations of these results. The interpretations were then classified and the frequency of each type of interpretation was assessed for each group of subjects.

The instructions for the autobiographical essay were as follows:

In this essay you are required to write your autobiography. But imagine that you are writing it in 50 years' time when you are an old person looking back over your life. So you would write something about the part of your life that, at the moment, still lies in the future, the part you have not yet lived through, the next 50 years. Remember, you are an old person writing your autobiography 50 years from now.

The main reason for requiring the autobiography to be projected into the future was that in this way the subjects would have greater opportunity to discuss their lives in a wider social setting, if they wanted to. More information could also be obtained about their life goals and aspirations.

The questionnaire given to the subjects consisted of the following six questions: (a) What two things would you most like to have that you don't now have? (b) What two things would you most like your child to have? (c) For what end would you be willing to make the greatest sacrifice of personal comfort, time, and money? (d) What two things could you conceivably accomplish during your lifetime that you would be most proud of? (e) What are the two worst things that could happen to you during your lifetime? (f) As a parent, what two specific lessons will you try hardest to teach your children?

In the analysis of autobiographies and questionnaire responses there emerged very marked and consistent differences between white students, on the one hand, and non-white students (Indian and African), on the other. In general, the replies of the white students were concerned with purely private goals and satisfactions, while the non-white students mentioned aspirations to serve and bring benefits to their communities far more frequently. For example, in the autobiographies only 24 per cent of the white students made any mention of any events outside the sphere of their private lives,

while 44 per cent of the Indian subjects and 61 per cent of the Africans did so. Moreover, in almost all cases social events played a purely peripheral rôle even in those white autobiographies in which they did receive a mention, but they were often of central importance in the autobiographies of the non-white subjects. In the questionnaire, replies indicating political desires and aspirations as well as the general goal of serving one's community in one way or another were far more common in the non-white group than in the white group. The detailed results of this questionnaire have been published elsewhere (4). These findings confirm those of Allport and Glespie (2) who found a greater degree of "privatism" among Americans, white South Africans, and New Zealanders than among Egyptians, non-white South Africans, and Mexicans.

In the second phase of the present investigation the subjects were given a brief summary of the main group difference found between the white and non-white groups. They were told that the replies of the white groups seemed to indicate a stronger preoccupation with private satisfactions, while those of the non-white group seemed to show a much greater degree of community orientation. The subjects were then asked to write down their own interpretations of this difference; they were asked to make an attempt to account for the difference.

C. RESULTS

The greater orientation towards social goals of the non-white subjects was explained by a number of different factors. These factors were categorized as follows:

1. Political discrimination. The non-whites as a group suffer under political disabilities imposed by the whites and therefore seek to work together against a common political oppression.

2. Economic discrimination. The non-whites as a group are exploited economically by the whites and therefore have common aspirations towards economic justice.

3. Social discrimination. The whites discriminate against the non-whites socially and therefore the latter try to gain social equality as a group.

4. Barriers to individual achievement. The non-whites as a group face social, economic, and political barriers set up by whites against the realization of the personal ambitions of non-whites, therefore the latter must remove the barriers which face them as a group if they are to achieve individual satisfaction.

5. Group inferiority. The non-whites are aware of the inferiority of

their group, socially, economically, and culturally, and hence strive to improve the position of their group in the social hierarchy.

6. Group traditions. The non-whites traditionally have a primitive or tribal outlook in which the group is more important than the individual, while the whites are affected by a traditionally individualistic culture.

The incidence of each of these explanatory categories in the two groups is shown in Table 1 in terms of the percentage of all the subjects in a group who mention a given type of explanation. For example, 64 per cent of the non-white group mention the factor of political discrimination, etc.

TABLE 1
PERCENTAGE INCIDENCE OF DIFFERENT TYPES OF EXPLANATION IN WHITE AND NON-WHITE GROUPS

Explanation category	Whites	Non-Whites
Political discrimination	31	64
Economic discrimination	3	28
Social discrimination	12	17
Barriers to individual achievement	12	28
Group inferiority	37	14
Group traditions	25	8

The explanatory categories given above fall into two distinct types. On the one hand there are Categories 1 to 4, all of which imply some form of social conflict between the white and non-white groups, and on the other hand there are Categories 5 and 6 which imply no such conflict. In other words, there seem to be two basically different types of social causation involved in these replies. In the one case the observed difference between the two groups is interpreted in terms of a social conflict between the groups, a conflict in which one group is suppressed by the other and fights against this suppression. In the non-conflict types of explanation, on the other hand, the observed group differences are accounted for by reference to the internal traditions or level of development of each group—no suppression of one group by another being involved. The incidence of these general types of social explanation is shown in Table 2. This table yields a χ^2 value of 10.71 for which $P < .01$.

There is thus a tendency for the white group to give non-conflict types of explanation and for the non-white group to give explanations in terms of social conflict.

In addition to the explanatory categories tabulated above there were certain explanations which occurred relatively infrequently in one of the groups but not at all in the other. Some of these explanations are not without inter-

est, however. Thus, the explanation that the observed group differences were due to an *imagined* social conflict in the minds of the non-whites occurred only among white subjects, though infrequently.

TABLE 2
INCIDENCE OF CONFLICT AND NON-CONFLICT TYPES OF EXPLANATION IN WHITE AND NON-WHITE GROUPS

Type of explanation	White	Non-White
Conflict type interpretations only	9	20
Both conflict and non-conflict interpretations used	7	11
Non-conflict interpretations only	16	5

On the other hand the following interpretations occurred only in non-white subjects: (a) The Africans among the non-white group have experience of a collective form of economy with communal land ownership and therefore lack the extreme individualism of the whites who have grown up in a competitive capitalistic economy; (b) the non-whites feel part of a world-wide movement for colonial liberation and therefore show more solidarity with their fellow men; (c) the whites have no need to be explicitly concerned with their collective interest because they can rely on the state always to protect the interests of the white minority; the non-whites have no such organ of power and must therefore stand together to achieve their social emancipation.

Finally, there was one aspect of the results which can only be stated in qualitative terms. Many of the interpretations offered by the non-white, particularly the African subjects, seemed to imply a sort of hierarchy of human motives according to which social freedom was a more basic aspiration than the satisfaction of purely material wants. The non-white subjects often indicated that they could not strive for private, material satisfactions while more basic human requirements remained unsatisfied. Thus, one of them writes: "There are certain things which are fundamental to the life of every individual. . . . I consider freedom the most important." Another writes that only when one is "endowed with the basic human rights" do wishes for material and personal comfort come to the fore. Another states: "The non-European sees no point in aspiring for individual success when the framework within which he has to work is out of order." Another subject points out that only when one has the same opportunities and freedom as others is one inclined to think in terms of one's individual satisfactions rather than in terms of shared social frustrations. There were many other statements along the same lines.

D. DISCUSSION

In what follows we shall speak of "groups" for the sake of convenience and disregard the individual exceptions to the overall pattern of group differences. Taking two groups of very different social position with unequal political, economic, and cultural opportunities we have found not only a difference between them in regard to their basic aspirations but also a difference in the preferred type of explanation for this very difference. In other words, it is not only that the difference in social position is associated with differences of personal values, but it is also associated with different ways of conceptualizing these very differences. On the one hand, certain social positions are associated with certain patterns of individual motivation, the white group is marked by "privatism," the non-white group by community orientation. But on the other hand, these social facts are themselves explained in different ways by the two groups, thus pointing to a basic difference of implicit social theory, a difference in the way in which the members of each group conceive the structure of the society as a whole and of the relationship of its constituent groups to each other. These findings appear to offer clear support for some of the basic premises of the sociology of knowledge. Of course, it is not possible to say to what extent such findings would be confirmed in a society in which group divisions are less rigid and less extreme than in South Africa.

There appear to be two main features that serve to distinguish the social explanations of the privileged white group from those of the under-privileged non-white group. In the first place the non-whites to a much greater extent than the whites base their explanations on the existence of a real social conflict between the two groups. The picture is one of the ruling forces in society as opposed to the non-white group and seeking to keep it in a permanent state of subjection, while that group tries to unite its forces in an attempt at ending this state of affairs. In other words, the conception is one of a real power conflict between the constituent groups of society, as they are seen by the subjects. On the other hand, at least half of the white subjects make no reference to such a conflict; their view seems to imply either a "natural" social hierarchy of superior and inferior groups or a complete lack of influence of the groups on each other, every group being determined only by its own internal traditions and way of life. If we regard the white group as reaping most of the benefits from the existing social inequality we would also expect it to be conservative in its outlook and to be largely opposed to any essential change in the status quo. If this is so, then the present results would indicate that this group's dislike of any change in the social struc-

ture leads it to deny or ignore the element of social conflict with its possibilities of social change. On the other hand, the under-privileged non-white group, in the conception which it has of society, stresses the factor of conflict and the resulting possibilities of change. In Mannheim's terms, there is a difference between "Ideology" and "Utopia."

A second feature which distinguishes the two types of social explanation relates to the very much greater frequency with which economic factors are mentioned in the interpretations given by non-whites. Altogether, 14 non-white subjects introduced this factor in one way or another, but only a single white subject did so. Coming from an economically highly privileged group and unacquainted as they are with material hardships the white subjects fail to recognize the causal rôle which this factor may play. One is reminded in this connection of the old saying that a fish would be the last animal to discover water. On the other hand, many of the non-white subjects have personal experience of economic hardships and assign to this factor a determining social rôle.

Another difference between the groups, albeit one which cannot be expressed quantitatively, relates to the theory of human motivation that seems to be implied in many of the non-white interpretations. According to this theory the desire for social equality and social freedom is assumed to be more basic, more powerful, than the desire to satisfy immediate private needs. In effect, these subjects are in agreement with Asch's position on this question (3) and not in agreement with some of the traditional biologicistic theories of motivation. In this connection one can only raise the question of the extent to which even supposedly scientific theories in psychology are affected by the social context in which they arise and flourish.

It is not within the scope of this investigation to answer the question as to the truth of either of the types of social explanation described. It must, however, be pointed out that the truth does not necessarily lie somewhere between or even outside these two views, as Mannheim seems to assume. It is quite possible that either the "white view" or the "non-white view" of this society is essentially correct and the other completely illusory. This question is one which can only be decided by future social developments. The occurrence of a revolution, for example, would constitute strong evidence for the correctness of the conflict theory.

We may briefly raise the question of the generality of our findings in respect to racially homogeneous societies in which social stratification is purely along lines of class. Oeser and Hammond (7) in Australia did find that "conflict" and "hierarchical" views of social structure were to some

extent related to class and that working class people stressed the economic differences between the classes more than middle class people. But the results of that study were certainly less clear than those of the present investigation, presumably because of the greater rigidity of social stratification in South Africa.

However, even in our study there were individuals in both groups that did not share the views of the majority of their group. This is probably due to the fact that our subjects were students, and as such were exposed to influences that ran counter to the stereotyped beliefs of their groups. This is particularly true of the white students who are almost certainly less homogeneous and more liberal in their social attitudes than the white population as a whole. As regards the non-white students, it must be pointed out that a few of them came from economically very superior homes and tended to be atypical in their replies. There is every likelihood that if our sample had consisted of white and non-white groups other than students the group differences would have been greater.

Finally, there is the question of the degree to which the replies obtained represent the "genuine" opinions of the subjects and the degree to which they are the result of political "indoctrination." There is little doubt that a few of our subjects had at least a nodding acquaintance with various political philosophies. But one must be careful not to reject an opinion simply because it has been formed as a result of reading or discussion. As Adorno (1) has pointed out, public opinion is hardly an individual matter—it is a matter of common ideas which are shared by a certain group of people. An ideology is always the ideology of a group. What is important is not that the individual's social theory is absorbed from his society, but that different social theories flourish and are propagated in different social groups. The social theory finds the ground prepared for it, as it were. Thus the white subjects in our sample are, on the whole, receptive to political theories of the right, while the non-white subjects would mostly welcome the political theories of the left. In this situation it becomes quite impossible, and indeed undesirable, to make a sharp distinction between personal and public opinion, except where subjects are atypical for their group.

There are, of course, enormous barriers to inter-group communication when members of different groups differ not only in respect to their personal aspirations but also in respect to their explanations for these differences. An important practical task for research is to discover the conditions under which individuals accept the social concepts of groups other than their own and what consequences this has for their behaviour.

E. SUMMARY

Two groups of South African students, the one white, the other non-white, were asked to write an autobiographical essay and to answer a series of questions about their aspirations. It was found that the white students were mainly oriented towards private satisfactions while the non-white students showed more evidence of orientation towards community goals. The same subjects were then asked to interpret this result. It was found that the non-white students more frequently based themselves on a group-conflict theory while the white students, on the whole, chose explanations that did not involve conflict. The non-white students also stressed economic factors more than white students. Some implications of these findings for the sociology of knowledge are discussed.

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SPEED AND ACCURACY OF PERFORMANCE OF AN AFRICAN NATIVE POPULATION AND OF BELGIAN CHILDREN ON A PAPER-AND-PENCIL PERCEPTUAL TASK*¹

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A. PROBLEM

Students of inter-cultural psychological differences have long since been struck by a lack of responsiveness to instructions to work fast among non-European groups. This fact has been discussed mostly in relation to the applicability of testing procedures, especially intelligence tests, involving speed performance, to these populations (Klineberg, 2). The phenomenon by itself has received rather little attention, although it is of both theoretical and practical interest.

In the Belgian Congo, the slowness of the Bantu population is mentioned by the majority of casual observers. It is, in work situations, the source of many complaints from European supervisors who have a tendency to attribute it to deliberate ill will.

One can ask the question whether the matter is one of constitutional slowness of mental functions or rather of culturally determined attitude towards speed performance. The study of activities characteristic of tribal life suggests many reasons why Africans should have some difficulty in sharing our interest in speed. On the other hand, it shows that they can go fast when motivated, as for instance while hunting.

An approach to this problem that has been suggested by Lambeth and Lanier (3), consists of varying task complexity and observing effect on speed differences. If the relative slowness of the Negro is determined by slower mental processes, it should increase with the complexity of the operations to be performed.

The extensive study on primitive populations of southern Kasai which the senior author has been conducting for several years provided many data

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²The work in Africa has been generously subsidized by the Belgian "Fonds du Bien-Etre Indigène" (Fund for Native Welfare). The "Fonds National Belge de la Recherche Scientifique" (National Fund of Scientific Research) has provided aid for the gathering of comparative data on European populations.

that can be analyzed in that direction. The present report deals with a first application of the method.

B. TASK

The task used is a modification of a paper and pencil perceptual analysis test devised by Rey (8). It consists of 34 items each of which is constituted by a set of dots arranged mostly at random (Figure 1). By drawing

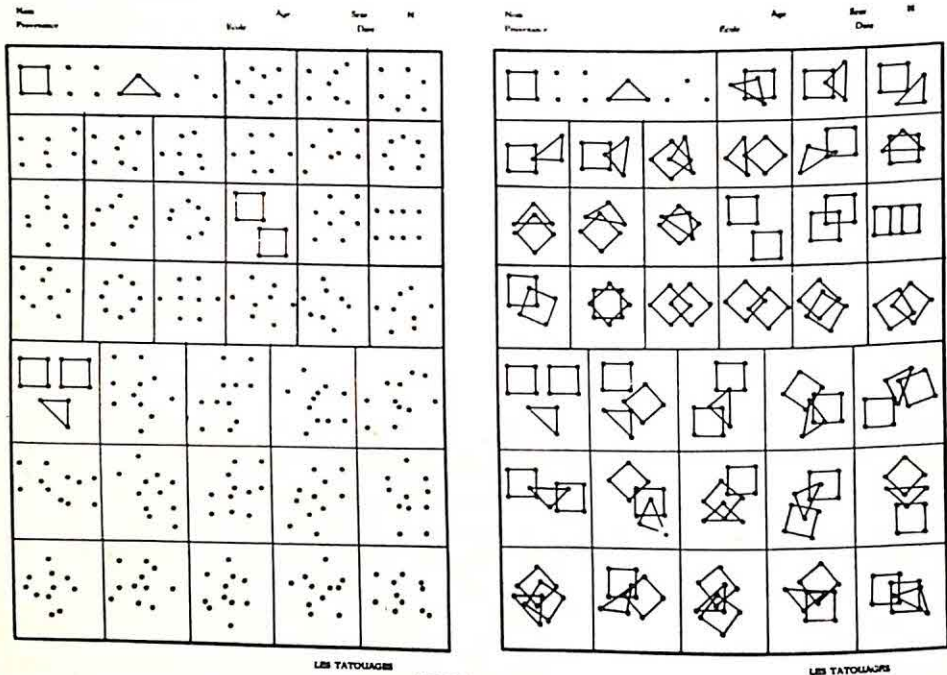


FIGURE 1
THE TEST (BLACK PAGE)
(Left, blank; right, completed)

lines between appropriate dots, geometrical figures can be isolated: one triangle and one square (Part A), two squares (Part B), one triangle and two squares (Part C). We introduced a preliminary practice task, consisting of the same dot patterns, printed in color, so that the dots belonging to each figure can easily be discriminated from the others by their color. The purpose of this modification was: (a) to make sure that all subjects had understood what sort of response was expected of them; (b) to get some measure of their graphic speed, which was considered of special importance when administering the test to populations little familiar with the use of paper or pencil.

C. SUBJECTS

1. *Africans*

Although the test has been extensively used during the various expeditions the senior author has led in the Belgian Congo, the present study is based only on the data obtained from 159 male adults employed as vehicle drivers in the diamond mines of Bakwanga (Kasaï), or applying for such a job. This population, which was chosen for the present analysis because of the homogeneity of environmental factors, has been described in other publications by Ombredane, Robaye, and Plumail (6), and by Ombredane (5). Ages range from 17 to 45 years and number of years of previous schooling from 0 to 5.

2. *Europeans*

For comparative purposes, the data obtained from 190 Belgian male schoolchildren, tested in two schools in Brussels, aged 6-15 years, will be used. It was necessary to use children to get a European population for which the test, administered without time-limit, is still discriminative.

D. ADMINISTRATIVE PROCEDURE

All African *Ss* were tested in groups of 2-3, by an African assistant. Instructions were given in the local language (tshiluba) as follows:

Colored page: *E* shows the example at the beginning of Part *A*. "Here is a tattooing made up of 4 black dots. You have to draw lines between them and make a figure like the one on the left: it is a square" (If any *S* does not know what a square is, *E* explains: "it is like the shape of a house") *S* draws the square. "Now here is a tattooing made up of 3 red dots. Draw lines between them and make a figure like the one on the left: it is a triangle (X "like the roof of a house")" *S* draws the triangle. "Now you will go on drawing lines between all red dots to make triangles. Further on, you will draw lines between all black dots to make a square, and between all green dots to make another square, like this . . ." etc.

Great care was taken to insure that every *S* had understood the instructions. These were repeated whenever a *S* gave sign of not understanding.

E takes note of time taken to complete the page.

Black page: "Here, you see the same dots as previously, but they are all black. Here again, you will draw lines to make squares, like this or triangles, like this. Have you understood?"

Time to complete the page was taken previously. One great advantage resulting from giving the colored sheet first was that it made it far easier to explain what was to be done with the black sheet.

For the Belgian children, the procedure was the same, except that the instructions were shorter, references to tattooings and to native houses being of course left out.

Three scores only will be considered in the present report: x , number of correct items on the black page (0-34. An item is scored as correct only when all two or all three figures are correctly drawn); T_1 time taken to complete the colored page; T_2 time taken to complete the black page.

Errors on the colored patterns rarely occurred.

E. ANALYSIS OF RESULTS

As can be seen from Table 1, time taken to complete the black page is much longer for the African adults than for Belgian children, even under 10 years of age. Only 17 per cent of the Belgian children of that age group take as long as the median African.

TABLE 1
TIME AND NUMBER OF CORRECT RESPONSES ON THE BLACK PAGE

	Africans	Belgian children 6-9 years	Belgian children 10-14 years
N	159	79	111
Median number of correct items	24	14	29
Median time	29' 30"	19' 50"	11' 06"
% of Ss slower than median African	50%	17%	3%

However, this is a very crude comparison. It is clear that speed by itself has no meaning as long as it is not related to achievement. Table 1 shows in fact that the groups differ also as to number of good responses, the Belgian children under 10 years being inferior, those aged 10-14, superior, to the African group. Before making any comparisons as to speed, the relationship between this factor and number of correct answers should first be investigated and if any correlation exists, comparisons should only be made between groups of comparable accuracy. It will be remembered that Belgian children were chosen as a comparison population for our group of African adults because European adults score too highly when the test is given without time limit.

On the other hand, the availability of a time score for the easy colored patterns makes it possible to get some idea about the influence of the graphic difficulty on the speed with which the black patterns are completed. This will be done by combining the two time scores.

Our analysis will proceed like this: first, using the data of the African group, we shall combine the two raw time scores in such a way as to give

two independent speed components of test performance; then the relationship between components and accuracy will be investigated; if any relationship between time components and number of correct responses is revealed, the Africans will be compared with Belgians at the same accuracy level.

1. *Combination of Time Scores*

A simple logarithmic transformation ($t = \log T$, T = number of seconds) succeeded in making the distributions of the two time scores symmetrical and approximately normal. The two transformed scores t_1 and t_2 are significantly correlated (product-moment $r = .52$). A simple way of expressing the information given by two correlated variables consists of combining them by Hotelling's method of principal components. A simplified procedure for obtaining the components in the case of two variables has been given by Faverge (1). The principle of Hotelling's method, it will be remembered, is to rotate the coördinate axes until they coincide with the principal axes of the concentration ellipse. The position of each point can now be expressed by two independent values.

In the present case, the principal components are practically equivalent, except for the constant term in each, to the two simple expressions

$$A = t_2 + t_1 = \log T_2 + \log T_1$$

$$B = t_2 - t_1 = \log T_2 - \log T_1$$

$$(r_{AB} = .027)$$

A measures general tendency to be slow in the two tests considered. It will be noted that: $A = 2 \log$ (geometric mean T_1 & T_2)
 B measures the tendency to be slower on the black than on the colored page. It represents the relative delay caused by the perceptual difficulty of the black page.

(Note that $B = \log T_2/T_1$).

Although the interpretation of the obtained components is here straightforward, it should be kept in mind that the main reason for the transformation is that it gives independent variables. Another transformation which we considered (T_1 and $T_2 - T_1$) has the disadvantage that it yields correlated components, which thus transmit partly redundant information.

2. *Relationships between Time Components and Accuracy (African group)*

A is negatively correlated (see Figure 2) with x . Variance analysis shows that a linear regression explains all existing correlation. The regression equation is:

$$A = 6.46 - .01065 x \quad (r_{Ax} = -.42)$$

This means that *the subjects who have the greater tendency to be slow on both tasks also give the fewer correct answers on the black page.*

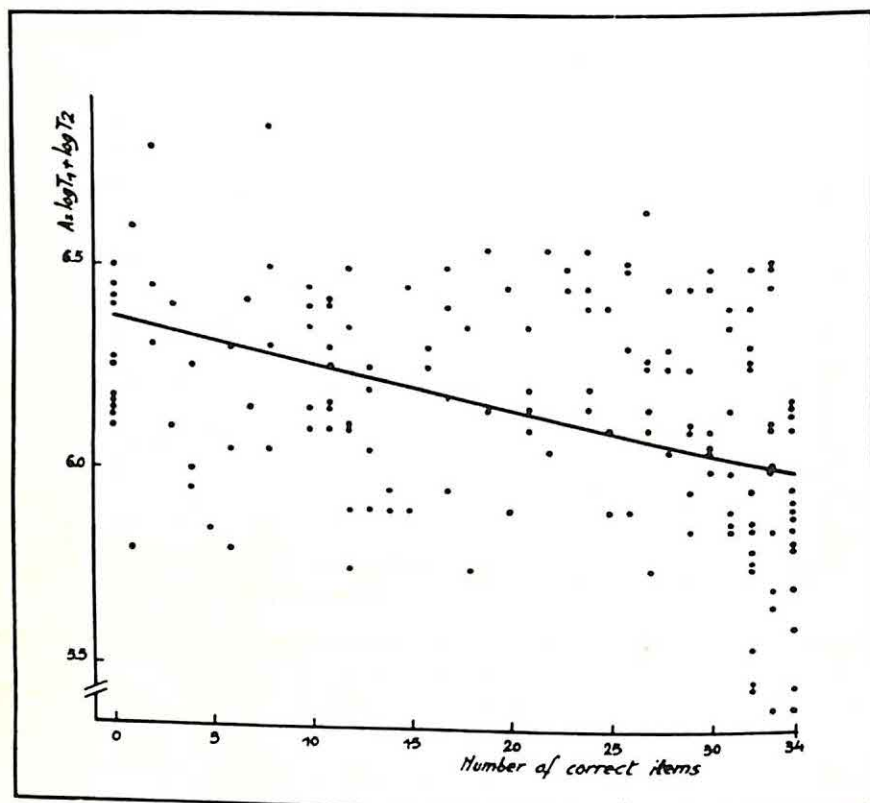


FIGURE 2
TIME COMPONENT A AND NUMBER OF CORRECT ITEMS (X) FOR 159 AFRICAN ADULTS,
WITH REGRESSION LINE OF A ON X

B has a parabolic relation to x as can be seen in Figure 3. Variance analysis shows that the adjustment of a parabola explains all existing correlation. The equation of the parabola is:

$$B = -.0995 + .04165 x - .00099 x^2$$

$$\eta_{Bx} = .63$$

Inspection of Figure 3 shows that the less accurate Ss spend as a group relatively less time on the black patterns. It seems they are delayed less than better Ss by the perceptual difficulty. It is as if they did not see that

there is a difficulty. As score increases, Ss are more and more delayed, until a maximum is reached in the vicinity of score 21. Above this score relative delay decreases. Very good Ss, near the maximum score of 34, are delayed to a lesser extent than medium ones.

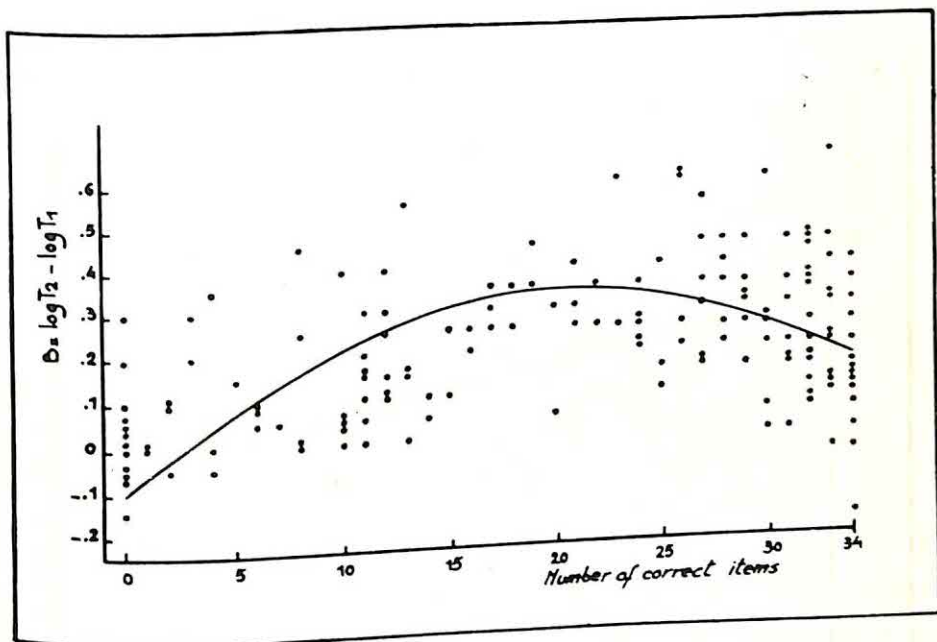


FIGURE 3
TIME COMPONENT B AND NUMBER OF CORRECT ITEMS (X) FOR 159 AFRICAN ADULTS,
WITH REGRESSION PARABOLA OF B ON X

3. Comparison with the Belgian Children

For the group of Belgian children, the relationships between time components and accuracy score have exactly the same shapes as for the African children.

$$A = 6.04 - .02096 x \quad (r_{Ax} = -.52)$$

$$B = -.11402 + .04761 x + .00111x^2 \quad (\eta_{Bx} = .60)$$

Here again, general tendency to work fast is correlated with accuracy, and, on the other hand, relative delay caused by the perceptual problem first increases and then decreases with accuracy.

By plotting regression lines for both groups, it is now possible to compare on each component Africans with Belgian children of the same accuracy level. This has been done in Figures 4 and 5. It can be seen:

(a) That at the same accuracy level, Belgian children have a far greater speed than the Africans. Bearing in mind that $A = 2 \log$ (geom. mean T_1 & T_2), one can estimate that the Africans take on the whole twice as much as the Belgian children—1.6 as much at the 0 score level, and 2.5 as much at the maximum score level.

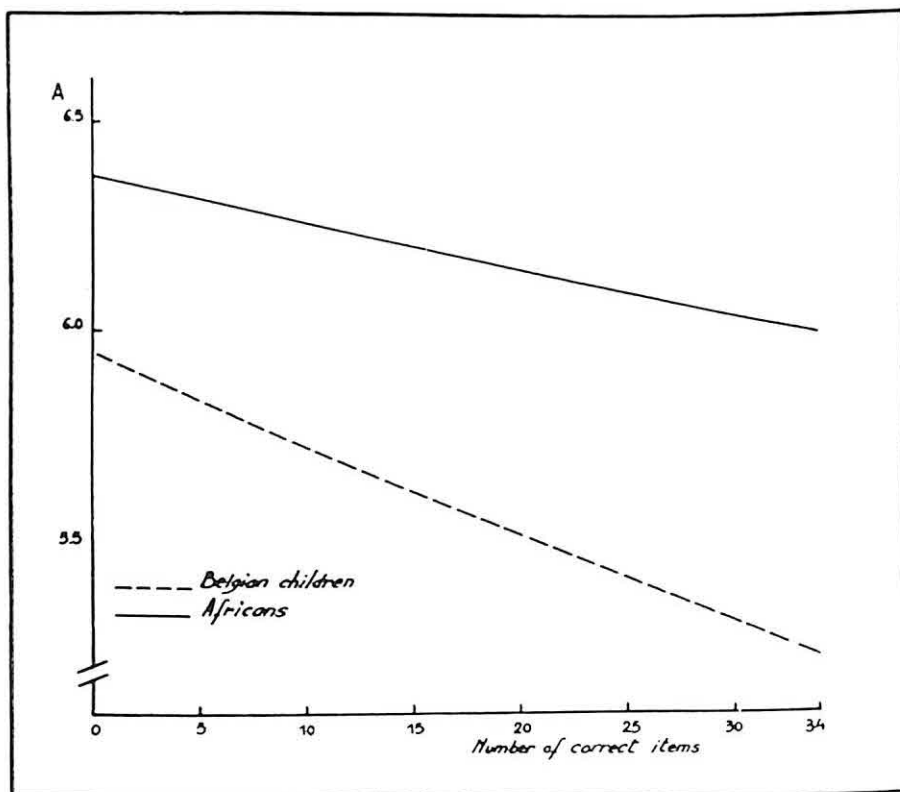


FIGURE 4
REGRESSION LINES OF A ON X FOR AFRICANS AND BELGIAN CHILDREN

(b) That at the same accuracy level, relative delay is practically the same for Africans and for Belgian children.

F. DISCUSSION

Our analysis made possible a comparison with regard to our two time components of our African adults with Belgian children at the same accuracy level. The result is very striking. The difference lies completely in the general slowness component. Africans are definitely slower than Belgians

at each level of accuracy. But this greater slowness is by no means related to complexity of task. There is no perceptible tendency for the Africans to be delayed more than the Belgians by the perceptual difficulty involved in solving the black patterns.

Speed of performance should be investigated on a larger sample of tasks before definite conclusions can be reached. Limiting oneself to the present

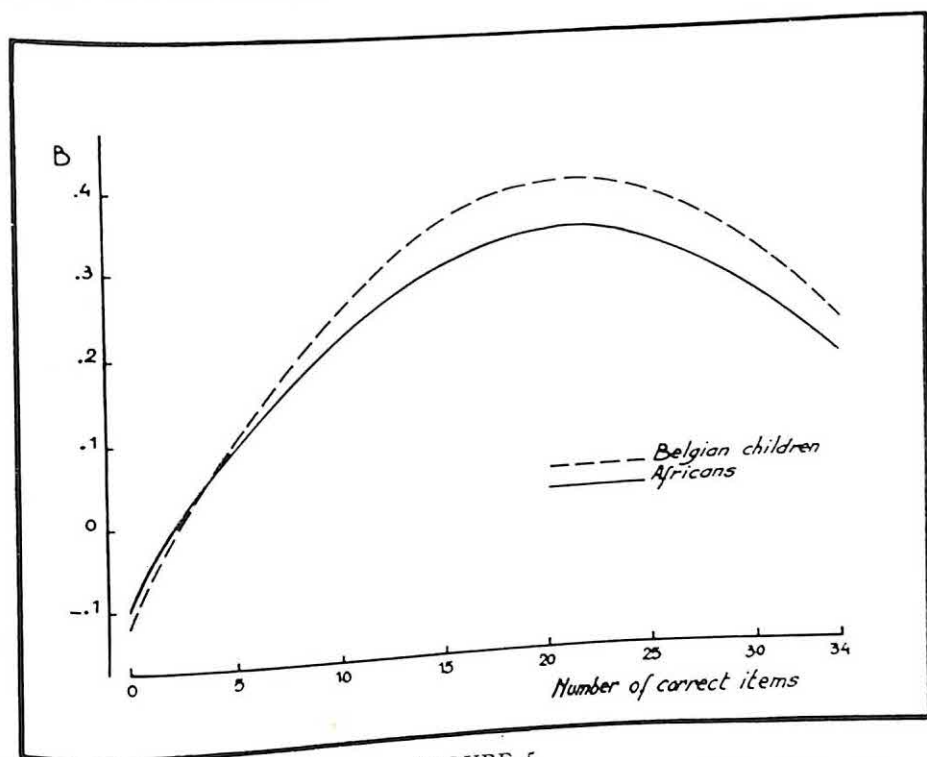


FIGURE 5
REGRESSION PARABOLAS OF B ON X FOR AFRICANS AND BELGIAN CHILDREN

data, one can observe that they are compatible with the hypothesis of a generalised slowness on the part of Africans, not with that of a specific slowness related to task difficulty. They do not enable us to say what this general slowness is due to. Probably, it is the resultant of a whole set of factors. One which is very striking when one watches African Ss passing any test is a kind of careful attitude towards a task which has been given by an European. Very often Ss stop after answering an item and look to the E as though waiting for some sort of approval. On several occasions, Ss complained that it was somewhat unfair to ask them to provide a solution which

had not been shown to them before (see Ombredane and Robaye, 4). Similar observations have been reported by Porteus (7, p. 308).

If slowness is interpreted as a general attitude towards the unfamiliar testing situation, one could ask whether it must not be considered as a simple artifact of this situation, of little interest after all. In fact, many professional situations introduced by the Europeans have the same unfamiliar characteristics. Many observations suggest that very often the Negro worker does not understand the criteria that are used by the European supervisor to judge his achievements. Slowness could then well be a simple matter of wisdom.

G. SUMMARY

One hundred fifty-nine male African adults from the Belgian Congo were given a paper-and-pencil perceptual task devised by A. Rey and consisting of drawing lines between randomly arranged black dots so as to isolate simple geometrical figures. A practice task, where the perceptual difficulty was reduced by printing in different colors the dots corresponding to the different figures, was always given first. Both tasks were given without time-limit. Scores were number of correct patterns on the black test, and time taken to complete each of the two tasks.

Both time scores were combined by Hotelling's principal components method. Two independent variables were obtained, one of which (*A*) expresses the general tendency to be slow on both tasks and the other the tendency to be slower on the (difficult) black patterns than on the (easier) color ones. The relationship of these components to accuracy on the black patterns was determined.

Africans were compared on both time components with Belgian *Ss* at the same accuracy level. (It was necessary to use children because European adults are too accurate on this test.) It appears that, for the same degree of accuracy, Africans are always slower on *A*, but no difference is apparent on *B*. It is concluded that, as far as these tasks are considered, the slowness of the Africans—defined by comparison with Europeans of the same level of accuracy—is not related to task difficulty. This finding is more easily explained by a general lack of interest in speed performance than by a slower operation of mental functions.

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THE IMPACT OF EDUCATION ON NON-SCIENTIFIC BELIEFS IN ETHIOPIA*

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A. THE PROBLEM

Ethiopia, with the technical advice and economic assistance of the United Nations, the United States, and other free countries of the Western World, is making a valiant effort to bridge a thousand-year gap in development. She is investing over one-fourth of her national income in educational programs in the effort to bring about literacy, changes in attitudes, in behavior, and in methods. While technical information and adequate budget are essential elements in achieving the goal of transition to modernity, an equally essential element is knowledge of the people who are involved in the dynamic processes of change. What are the attitudes and beliefs of Ethiopians which motivate their daily behavior? Are there commonly-held beliefs which might interfere with or seriously impede a given educational program or health project? Which of the non-scientific beliefs are affected by learning, and which are resistant to education?

Let us consider some concrete examples of the implied problem: A recent report by an American technical adviser in ceramics pointed out that the Ethiopian pottery vendors in the Dira Dawa market were importing their wares several hundred miles from Addis Ababa despite the fact that good clays existed locally which would permit them to make and sell pottery for half the price or twice the profit. He recommended that local production of pottery be introduced. There is a widespread belief in Ethiopia that all pottery workers are possessed of the Evil Eye. Would this affect the success of the suggested project? Would an educational program effect a recess or elimination of this potentially impeding belief? How strong is this belief in Dira Dawa?

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The American technical adviser to a newly-opened Ethiopian trades school expressed concern over the fact that most of the students wanted to study electricity, practically no youth was interested in learning such trades as plumbing, bricklaying, etc. There is a belief, reportedly stretching back to the days of Queen Sheba, that manual laborers in general, and iron or metal workers in particular, can turn themselves into hyenas at night. Is this a factor which must be taken into consideration when planning a manual arts training program or a trade school?

Malaria is one of the greatest health problems in Ethiopia. American advisers of a malaria-control team have expressed the hope that the disease can be eliminated within a decade. The academic curriculum for the government-sponsored schools introduces the scientific study of malaria in the fourth grade; yet one can hear Ethiopian teachers insisting that malaria can be prevented by eating garlic and that the best treatment for the disease is to eat butter that is 15 or 20 years old. Will these beliefs contribute in any way to the success or failure of a malaria control program? Since feelings are facts operationally, must program-planning take into account these non-scientific feelings and deal with them as pertinent facts?

A literate nation is provided with the means for substituting scientific explanations of everyday events—such as death, disease, and disaster—for the supernatural, non-scientific explanations which prevail in developing societies and which have existed in Ethiopia for centuries. There exists in Ethiopia a literate segment of the population which has been introduced to modern education through government-sponsored schools during the last 15 years.² The program is modeled largely after the English system, and the curriculum from the primary grades through secondary school is designed to meet the criteria for passing the London Matriculation Examinations.

Is this type of modern education having an impact on the non-scientific beliefs which influence attitudes and motivate behavior in Ethiopia? Is it possible to identify any beliefs which are impervious to present educational content and methods, and which may have significant bearing on Ethiopia's desired rapid transition and development?

The purpose of this study is to explore some of the foregoing questions, to discover something about the beliefs and attitudes of the literate segment of the population, and to learn the extent to which the present program of education is having an impact on non-scientific beliefs which motivate attitudes and daily behavior in Ethiopia.

²Prior to the Italian invasion education was limited almost exclusively to Church Schools where students learned to read the Bible in the ancient language, Ge'ez, as well as the modern language, Amarigna.

B. PROCEDURE

Over 200 non-scientific beliefs were gathered. There was no selectivity in collecting items; a record was kept of every non-scientific statement encountered. Some of the original items were eliminated on the chance that they might be offensive to social, tribal, or religious groups. A few additional items were withdrawn when it was established that a belief was held by only one small tribe or sub-group within a tribe, or that it was unfamiliar to unschooled adults who had proved sufficiently informed in this area of knowledge to be able to give experienced examples of the truth of the other statements. The remaining 132 beliefs were translated into Amarigna and mimeographed under the title "Attitude Survey, Form-S."

Information called for on the cover page of the survey form included age, sex, city, school, grade, and language spoken in the home (as a clue to tribal cultural influences). Subjects were instructed not to write their names on the form. Examples were given of a true statement, a questionable statement, and a false statement, together with directions for marking the form to indicate judgment of each statement as *true*, *?*, or *false*. The forms were submitted to students in the government schools throughout the Empire from Grade 2 through college freshmen, to teachers, to student nurses, and to first-aid workers. This preliminary study reports the results of 1,228 subjects. In addition, 10 selected items were included (for research purposes only) in the 1957 national examination for graduating nurses, which was taken by 24 persons.

Results were tabulated in the three categories of judgment; however, they are reported in terms of two categories; per cent of persons judging an item false; per cent indicating a degree of belief by encircling *true* or the question mark. It had been anticipated that the question mark might be a popular choice, especially among the more advanced students; therefore, the directions carried the following admonition: "Try to decide whether each statement is true or false. Try to avoid encircling too many question marks." Actually, the question mark was so little used as to become an insignificant category. Some inquiry of advanced subjects plus discussions with Ethiopian colleagues suggested that, where used, the question mark indicated a degree of belief short of conviction.

Tabulations were summed separately for each grade in each school sampled; then results throughout the Empire were grouped by grade; next, results were grouped by academic subdivision: primary, elementary, etc. Results of this preliminary study are reported according to these academic subdivi-

sions. (Results of second-grade students were excluded from this report to avoid the possibility of introducing a measure of reading-skill.)

C. RESULTS

A major problem in presenting the results of a study which yields a mass of data is that of grouping the information into small, meaningful units. First, let us view the 132 items as a whole: 76 of the items are believed by 50 per cent or more of the 210 primary students; e.g., 77 per cent of the primary students believe that, on New Year's Day, you must kill the same kind and color of animal customarily sacrificed by your forefathers or you will suffer from trouble of some sort. Attitudes of this sort, which specifically chain the present to the past, may be a force in delaying progress. Sixty-four items are believed by 50 per cent or more of the 381 elementary, or intermediate, students; for example, 77 per cent of this group believe that certain mineral waters can cure stomach trouble by causing a person to vomit worms, sometimes toads. In a land where one medical research study³ has revealed that roughly two-thirds of the children in school suffer from some sort of intestinal parasite, this kind of non-scientific belief might well contribute to a medically unnecessarily low state of health for the entire nation. Fifty-six items are believed by 50 per cent or more of the 451 secondary school students; e.g., 81 per cent of the secondary school students believe that certain people can read the past and the future from the stars. While belief in astrology probably exists in some degree throughout the world, the concern here is that such a large per cent of the better educated persons in Ethiopia hold the belief, a belief that could lead to resignation about a supposedly fixed future, in contrast to optimism about the power of man to shape his own future, through the understanding and control of natural forces, through the application of modern, scientific knowledge. Thirty-four items are believed by 50 per cent or more of the 96 teachers;⁴ for example, 74 per cent of the teachers in this study believe that gonorrhea first came from a female dog. In a country where venereal disease is a major health problem, the non-scientific beliefs of teachers related to any aspect of the problem become of major significance. Nine items are believed by 50 per cent or more of the 61 medically-oriented student nurses and dressers (first-aid workers); for example 53 per cent of this more scientific-

³An unpublished study made by the faculty of the Public Health College of Gondar on the school population of that city.

⁴None of the teachers in the population of this study had had college training; hence, in terms of academic background, their level is below that of the college freshmen.

cally sophisticated group believe that if a person exposes himself to sunlight after eating fried food, he will get sick. Finally, six of the items are believed by 50 per cent or more of the 29 college freshmen; e.g., 52 per cent believe that a child will grow better if the nerves are removed from under his back teeth. (Incidentally, this primitive surgery is performed by a local person, without anesthesia or antiseptics; it consists of an incision, then the jerking out of the nerve with a tool which resembles a crochet-hook. Children have been known to die from subsequent infections.)

The foregoing statistics give evidence that there is a measurable trend toward increased disbelief in non-scientific statements with increased schooling. Behind this gross observation, however, are some interesting deviations and exceptions. Some of the beliefs are not held by children during the primary grades, but are acquired later, along with reading, writing, and arithmetic. Some beliefs are, apparently, originally brought to school and retained during the primary years, are subject to doubt during the middle-school years, and are reinforced during secondary school years. Seventy items, 53 per cent of the total number, remain relatively unchanged despite education; that is, the variation in per cent of belief is less than 10 per cent for the total group of primary, elementary, and secondary school students. Of these 70 items, 32 are beliefs held by 50 per cent or more of the total population of this study; 38 are held by fewer than 50 per cent of the total student group. As an example of range, within this category of beliefs unaffected by education, the highest is Item 52: 75 per cent, regardless of education, believe that if a bat flies over your head you will get a skin disease, the lowest item is No. 11: only 15 per cent believe that if one cleans his teeth during the night, he will lose his brother. These two items represent extreme range, in terms of frequency of belief, within the category of items unaffected by education. Let us now consider, more specifically, the clustering of items in relationship to academic groups and the shiftings of frequencies of belief.

Perhaps the most important person in any educational program is the classroom teacher. Quite apart from the dissemination of knowledge, teachers indoctrinate while teaching. Laws may be passed making indoctrination a crime; instructors may studiously attempt to avoid indoctrinating as a result of purely personal convictions about the rôle of the teacher. Yet so long as teaching is done by human beings, the teaching process will be colored by indoctrination. Even the decision of a teacher to refrain ever from making value-judgments results in classroom behavior which conveys a subtle sort of indoctrination. Human beings do feel and believe, and these feel-

ings and beliefs are conveyed to pupils the world over by teachers the world over. Therefore, in a study of this sort, it becomes important to discover which non-scientific beliefs are held by, and hence transmitted or reinforced by, Ethiopian teachers.

A slight digression is necessary at this point to present some facts about the teaching population of Ethiopia. During the school year 1956-57 there were 3,003 teachers in Ethiopia conducting classes from Grades 1 through 12. Of these, 406 or 14 per cent were foreigners, of which 218 or 54 per cent were Indians. These foreign teachers function primarily as secondary school teachers and as head-masters. Ethiopian teachers—the possessors and conveyors of the local culture including non-scientific beliefs, represent 86 per cent of the total teaching population.⁵ Their work is concentrated at the primary and elementary school levels, with Grades 1 through 8. Roughly 30 per cent of the Ethiopian school teachers have had no more than four years of academic training. None of these teachers were included in the present study. Thirty per cent of the remaining Ethiopian teachers have had anywhere from five years of academic background to eight years plus from one to four additional years in a teacher-training program. The teachers used in the population of this study were drawn from the latter category; i.e., Ethiopian teachers with five or more years of formal education, capable of using the English language as the medium of instruction. Let us look at the beliefs, the non-scientific beliefs, which are held by teachers, and therefore presumably reinforced in the classroom situation in Grades 1 through 8. Again the grouping of data becomes a problem. The following categories appear to be convenient ones: items related to (a) the Devil Eye; (b) Death; (c) Disease; (d) Disaster; (e) Danger; and, of course, the always necessary category of (f) Miscellaneous. Another reporting problem: What shall be considered significant? Let us arbitrarily say that if 50 per cent or more of the teachers believe that a non-scientific statement is true, it is an important item. By these criteria, we find that, of the 34 items believed by 50 per cent or more of the teachers, 16 are related to disease, the cause, prevention, and cure. In other words, in a country where the life expectancy is estimated to be between 30 and 35 years, the largest number of false, or non-scientific beliefs, held by native teachers has to do with the problem of diseases, their cause, prevention, and cure. The Ethiopian Government, The World Health Organization, the United States International "Coöperation Administration and other groups, are earnestly en-

⁵These figures were obtained from Mr. Paul Arnold, I.C.A. adviser in Research and Statistics.

deavoring to change the health picture in Ethiopia. Surely this finding should take some place in their considerations.

To dramatize this point, let me introject an example or two. An Ethiopian colleague, a former teacher, warned me against drinking water in a certain provincial town on penalty of my catching Malaria. He was challenged thus: "You are one of the better educated persons in Ethiopia; don't you know the cause of malaria?" He quickly, and eruditely, gave all the known scientific facts about Malaria. Then he added: "You people from the United States and the United Nations think that this (the scientifically established cycle) is the only way to catch Malaria. We Ethiopians know better. We know that one can also catch malaria from drinking the water in places where the Anopholes breed." Well, this is all to the good. So this chap is unscientifically over-cautious. This will do the country no harm, even though his attitude is, in part, unscientific. But let us look at another aspect of this same problem. A little boy, aged 10, developed gonorrhea. When he first brought his painful symptoms to me, he stated that he had consulted the school health worker, locally called a dresser. He had told the child that the disease from which he suffered was contracted from having urinated on a stone warmed by the sun; he neither treated the boy nor referred him to a doctor. This first-aid worker is on the payroll of the Ministry of Education; he is in a position even more important than that of the classroom teacher wherein such problems as venereal disease are concerned. Let us remember that this health-worker was giving to this child his best advice—not as it had been taught to him by instructors in the dressers' courses, which he had studied and passed, but as it had been taught to him by his father and grandfather, before he went to school. The dresser at a local hospital-clinic, well trained enough to take slides and administer curative hypodermics, explained to the boy that the disease was not contracted from a sun-heated stone on which urine had been passed. He laughed at this as an old superstition; rather, he told this boy, such a disease could be contracted from the secretions of a person who also had the disease. To quote the child, he said: "Someone in your household has this disease; he has perspired, or he has shed tears from his eyes. The perspiration or the tears have touched you. That is how you contracted the disease."

Unless the instructors and trainers of nurses, dressers, and teachers are aware of the local superstitions and take them into account in curriculum and instruction planning, progress toward greater health for the nation will be considerably impeded, I believe.

Three of the items believed by 50 per cent or more of the teachers relate

to the devil or evil eye. Thy read as follows: Manual laborers, such as pottery makers, usually have the evil eye. There are some skillful persons who can summon the devil at will. If a child eats bacon, he will be protected from the Evil Eye. (It should be noted here that eating pork in any form is prohibited by the Ethiopian Orthodox Christian Church.)

Among the five items on danger, disaster, and death believed by 50 per cent or more of the teachers, we find the following belief: If a person has an electric shock, the wires will immediately carry his blood to the dynamo at the headquarters of the electric power company. Actually, 67 per cent of the teachers believe this statement; yet they are teaching text-book science well enough that, on the 1956 Ethiopian 8th Grade General Examination, a national examination, 77 per cent of the 8th grade students correctly answered a question concerning convection, radiation, and conduction of energy. It is not too strange, then, to discover that students who have passed this 8th grade examination with sufficiently high marks to be accepted in secondary school still cling to a non-scientific belief so widely held by their former teachers: 66 per cent of the secondary school students indicated belief in this non-scientific statement about electrocution. This is but one of many bits of evidence that acquisition of information is not necessarily increased knowledge, is not always bringing about a shift from non-scientific to scientific attitudes.

The 61 nurses and dressers used in this study represent persons of varying academic background. Some of the dressers had had as little as four or five years of formal schooling prior to taking the dressers' courses. The nurses had had from 6 to 10 years of general education before entering nurses' training. Despite this meagre academic equipment, this medically-oriented group proved to be second only to the college freshmen in their rejection of non-scientific beliefs. Only nine of the 132 items are believed by 50 per cent or more of this specially educated group. In terms of influence for change within the culture this scientifically trained group is of particular importance. It therefore becomes of special interest to explore the impact of education on their non-scientific attitudes.

Six of their nine widely believed items are specifically related to medicine; three are miscellaneous items. These significant six items were combined with four additional medically-related items which were believed by 40 per cent or more of the medically-oriented group. The 10 items were included (for research purpose only) in the 1957 National Examination for Graduating Nurses. Of the 24 nurses who took the examinations, eight were, as junior students, part of the population of 61 medically-oriented persons com-

prising the category of this study. Results, at that time, were made known to the nursing school faculty. We therefore have a small sample, within our group of 24 graduate nurses, who presumably had some specific instruction around particular non-scientific beliefs known to be held by student nurses. Let us look at the results.

The belief that Beautiful couples produce ugly children remains relatively unaffected by general or special additional nursing education. Inquiry revealed that genetics is not taught in the schools of nursing. Sixty-two per cent of the original group of 61 medically-oriented persons indicated belief that certain mineral waters can cure stomach trouble by causing a person to vomit worms, sometimes toads. Only 42 per cent of the graduating nurses believe this, but there is little difference between the eight specially tutored nurses and the 16 untutored ones; this may be called a persistent, resistant belief. Both mental hygiene and psychiatric nursing are included in the curriculum; nevertheless, 33 per cent of the graduates believe that too much charity leads to madness. Twenty-five per cent of the tutored, as opposed to 37 per cent of the untutored cling to this belief as graduate nurses. This, however, is in heartening contrast to the 51 per cent of the total medically-oriented group who believe it. If a person exposes himself to sunlight after eating fried food, he will get sick. While one-fourth of the graduates believe this, only 13 per cent of the tutored nurses held to the belief. Returning to the causes of mental illness, we find that 44 per cent of the untutored graduates believe that too much learning results in madness; whereas, none of the tutored graduates indicated belief.

The most dramatic shift of belief, within this group of 10 items, occurs with the statement: The deaf, the dumb, and cripples can be cured by bathing in, and drinking, the mineral water which causes a person to vomit worms or toads. Seventy-one per cent of the 61 in the medically-oriented group believed this. Only 19 per cent of the untutored, and none of the tutored graduate nurses believed it. The remaining four items in this group were believed by 44 to 46 per cent of the medically-oriented group. None of the graduate nurses believe either of the following two: A child will grow better if the nerves are removed from under his back teeth; the best treatment for malaria is to eat butter that is 15 or 20 years old. None of the tutored group believes either of the remaining two items, but the untutored group believes, 19 per cent and 12 per cent respectively, the following: If a person kills a cat or a lizard, his hand will shake forever after. If a bat flies over your head, you will get a skin disease.

The foregoing data suggest that dresser-training or nursing-education is

superior to academic secondary school education, and only slightly inferior to college freshman education, in its impact on non-scientific beliefs. Further there is evidence that tutoring specifically related to non-scientific beliefs has greater impact than merely more general nursing education has. Also, it must be noted that, of the 132 items of this study, only one, that related to genetics, is held by 50 per cent or more of the graduate nurses.

Now let us look at the six items so resistant to academic education that they are believed by more than half of the college freshmen students. The widespread belief in demonology, mentioned earlier in connection with teachers, again appears. In addition to believing that skillful persons can summon the devil, these college students believe that if you go into a room which has been closed for a long time, you will be attacked by the devil. Three of the remaining four items are ones already cited as resistant even to medically related education (and also believed by more than half the teachers): Items relating to the cure of stomach trouble, the removal of nerves from children's teeth, and the relationship between charity and madness. The final item of belief held by more than half of the persons in this most advanced academic group (and shared by 63 per cent of the teachers) is that a person in malaria country can prevent infection by eating garlic.

Having considered the special groups, and special kinds of education, represented in this study, let us now turn our attention to the children in the primary, elementary, and secondary schools. What is the nature of the beliefs which reflect a steady decrease in belief with increased years of education? Eighteen items fall into this category, only 14 per cent of the total. Two are related to the devil; only one is related to death; two are related to disease; eight, the largest category, are related to danger or disaster, and five are miscellaneous. This would suggest that those non-scientific beliefs which are most amenable to correction and change through academic education are related to phenomena of danger or disaster. Does this mean that education is giving these children some sense of personal, internal control over their environments, as opposed to a sense of impersonal, external control? May we even assume a causal relationship here? Is it mere chronological growth rather than academic education which contributes to the decreasing belief? As mentioned at the outset; these non-scientific beliefs are widely held by unschooled adults, which permits us to hypothesize that education is the force at work for change; however, additional research must be done before this hypothesis can be expressed as a conclusion.

Let us consider eight items which, unexpectedly, reflect a steady *increase* in belief with increased years of education. Two of the items have to do

with stopping the rains. Those who have lived in places where there is no word for draught, where seasons are marked by the onset and cessation of the rains, the little rains and the big rains, those people can perhaps identify with students who, as they mature, give increasing interest to the phenomena of rain. It is only regrettable that this interest manifests itself, in part, by increased belief in non-scientific concepts about ways and means of stopping the torrents. Astrology and the meaning of dreams creep into belief slowly and grow with years of education, accounting for two of these beliefs which increase with the years of learning. Two other items relate to the curative powers of certain waters, beliefs already cited as persistent. Possibly beliefs in this area are related to increased religious awareness as students grow older. The mineral waters which bring the miracle cures are highly regarded because of their holiness rather than out of any consideration for their chemical content. One belief, within this group of increasingly held beliefs, is that gonorrhea first came from a female dog. Possibly this merely reflects a physical growth factor which makes the problem, and a desired explanation for it, of increased concern with age. The academic curriculum does not touch the problem, and, as previously noted, school health workers are not prepared to contribute anything toward a decrease in the particular non-scientific beliefs associated with this disease. The remaining item which increases in belief with education seems to be beyond explanation; it would fall under the category of miscellaneous: A person can eat more bananas if he has his feet in water while eating them. One exceptionally bright Ethiopian student, now abroad on a foreign-study scholarship, repeatedly offered to demonstrate the truth of this strange, non-scientific statement. He did not believe it as a child (22 per cent of the primary school children do not believe it). But in secondary school he decided to test the hypothesis and his experiences eating bananas with feet in and out of water led to his conviction (like 61 per cent of the secondary school students) that the statement is unquestionably true. It is noteworthy that most of this group of beliefs show little increase in belief from primary to elementary school but show marked increase in belief at the secondary school level.

And now we come to perhaps the most fascinating group of non-scientific items in this study, those which show no change in frequency of belief with education, those which are resistant to education, those which children bring to the first grade of school with them and retain persistently, unchanged, through 12 years of schooling. Seventy items, 53 per cent of the total, fall into this category. In other words, more than half of the non-scientific statements explored in this study are impervious to present-day education in

Ethiopia. The state of constancy implied by the phrase, "no change in frequency of belief with education," was arbitrarily determined as being a variation of less than 10 per cent in frequency among the three academic groups: primary, elementary, and secondary school students.

Thirty-eight of the items in this unchangeable (or at least currently unchanging) group are items of relatively low frequency of belief; that is, fewer than 50 per cent of the total group believe the item, and the variation among the three academic groups is 9 per cent or less. (It must be mentioned that nine of the 38 loosely-called low-frequency-of-belief items crowd this arbitrary cut-off point of 50 per cent, the highest being an item believed by 49.6 per cent of the total group.) One cannot call any of these persistent, non-scientific beliefs insignificant, but one can direct his major concern, at this point in the development of a country, to those persistent, non-scientific beliefs which are held by *more* than 50 per cent of the literate group sampled, and which show little (less than 10 per cent) or no reduction in frequency of belief with years of education.

Let us direct our attention to the 32 items believed, with approximately equal frequency, by 50 per cent or more of the 1,042 children, regardless of grade-level. Thirteen are related to disease; for example, if a person spits on a toilet, he will have a sore throat. A person who has tape worms will not suffer from amoebic dysentery. If a man urinates facing the moon, he will get gonorrhea. If a frog urinates on a person's hand, that hand will become infected and rot away. Cancer of the throat is caused by wearing a scarf around the neck, or a turtle-neck sweater. Members of certain tribes must shout praises once a year or they will suffer from leprosy and will lose parts of their bodies. In a land where life expectancy is pathetically short, is it of no importance that education is having no measurable impact on these naïve beliefs about the causes of disease?

Then the devil again raises his leering head. In addition to persistent beliefs already mentioned in other context in this study, such as that pottery makers have the evil eye, we find that such a statement, as, "A copper anklet will protect an infant from the Evil Eye," is impervious to education. Of some possible social, perhaps even political, significance is the fact that among the non-scientific items of high-frequency of belief which are resistant to education is the statement, "A person with thin lips is dangerous."

Thirty-six of the 132 items in this study defied classification into any of the meaningful categories thus far discussed. One might merely call them anomalous as a group; however, close scrutiny reveals that there are three patterns within this group of items. Fourteen of the items reflect a decrease

in belief during pre-secondary education but little or no change with secondary education. Nine items show little or no change with pre-secondary education but reflect decrease in belief with secondary education. Thirteen of the items might, most properly, be called anomalous: 10 of them show decrease from primary to elementary but increase from elementary to secondary; three show increase from primary to elementary but decrease in belief from elementary to secondary. If there is a logical grouping of these items which apparently *are* affected by education, but affected in varying ways, that logic escapes this researcher. These thirty-six items spread, in context, among the devil, death, disease, disaster, and luck, both good and bad. The over-all frequency of belief ranges from a mere 20 per cent of primary school students who believe that "If three persons light their cigarettes from a single match, one of them will die" (a familiar, world-wide superstition) to a high of 87 per cent of the secondary school students who believe that: "There are some skillful persons who can summon the devil at will."

D. DISCUSSION OF RESULTS

Both clinical and test evidence exists to support the thesis that Ethiopian children are as heavily endowed, intellectually, as are the children of other lands. The presentation of this evidence is the proper subject-matter of another paper, but as a quick datum to illustrate the sort of evidence referred to, consider this finding: Over 200 Ethiopian children were given parts of the Binet and Wechsler Intelligence Tests. If one bases judgment of results on a sub-test such as drawing a diamond, the average American youngster is mentally two years in advance of the average Ethiopian child; if one bases judgment of results on a sub-test such as correct counting of pencil-tappings on a table, the average Ethiopian child is mentally two years in advance of the average American child. In America, a child is given a pencil, and introduced to its use in the reproduction of forms, before he is weaned from the nursing-bottle; pencils are somewhat rare in Ethiopia. But in Ethiopia, a child's birth is heralded with rhythmic drum beats, and heard-rhythms are a part of his daily life. The littlest Ethiopian lad can identify various tribal rhythmic patterns (which the present writer, an observer of this phenomenon, cannot do despite a musical education and several years in Ethiopia).

Intelligence is not the problem! And the problem cannot be solved through intellectual or intellective approaches alone. Yet these approaches must not be ignored. The data of this study strongly suggest that education is capable

of making an impact on non-scientific beliefs. Further, the data suggest that this impact has been quite marked when it is specifically related to the problem of unscientific beliefs, quite marked when within a medically-oriented curriculum, measurable with about half the items studied, and with the other half, somewhat feeble. There are probably infinite reasons for the regrettably low relationship between acquisition of academically sound scientific information and the relinquishment of non-scientific beliefs. Unquestionably, many of these reasons can best be explained in terms most familiar to the cultural anthropologist or the social psychologist. But let us look at *some* educational aspects of the problem.

How closely is the present curriculum related to the real needs of Ethiopian children? It was mentioned earlier that study of Malaria is introduced in Grade 4. The American educator is somewhat shocked, however, to note that the curriculum cites the cause of the disease as a gnat. Mr. Webster's admirable volume is somewhat reassuring with the explanation that in England the word gnat is frequently applied to mosquitos in general. Leaving semantics aside, this suggests that the curriculum is related to needs in science in Ethiopia. But with the knowledge of needs as revealed by this present study, let us look further into the present science curriculum: By the 5th year, Ethiopian children are studying the earth's crust; astronomy is paramount in the first half of the 6th year (with obviously little impact on beliefs in astrology), and physics and chemistry are the major concern of the second half of this 6th year. Do not underestimate the Ethiopian school-boy; he is, in fact, studying, learning, and passing examinations in astronomy, physics, and chemistry by the end of the 6th year.

No one would quarrel with the statement that education must begin where the learner is, not where the teacher or adviser thinks he should be or wishes he were. Subject matter introduced above the level, or different from the level, of the learner's orientation is a mere abstraction. The new learnings are rooted in air; they do not take hold, root, bud, or blossom. They can be memorized and regurgitated at examination time, but they do not effect changes in attitudes or behavior. Without such changes, no meaningful learning of a sort worthy of a nation's subsidy has taken place.

This study has demonstrated that education can have, and in some measure is having, an impact on the non-scientific beliefs which motivate attitudes and daily behavior of Ethiopians. The study has further demonstrated that more than half of the superstitions herein considered have proved impervious to modern educational procedures in Ethiopia.

E. IMPLEMENTATIONS OF RESULTS

In order to close this paper on a happy note, let us look at some of the ways in which the results of this study are being used: During the summer of 1957, every Teachers' Vacation Course in Ethiopia (an inservice training program with compulsory attendance) will include a work-shop on every-day science, based on the findings of this study, especially the findings with reference to the non-scientific beliefs held by teachers. One hospital with a dressers' training program has already revised its curriculum on the basis of the results of this study. Perhaps most important, the Director of Curriculum and Research of the Ethiopian Ministry of Education is planning a series of primers for children and a series of radio and newspaper articles for adults designed to attack the persistent non-scientific beliefs revealed by this study, and he is also taking the results into consideration in a contemplated revision of the curriculum.

Education has had, and is having, an impact on non-scientific beliefs in Ethiopia. It is hoped that this identification of specific beliefs which are amenable to or resistant to present educational methods will bring about activities which will increase that impact.

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A COMPARISON OF TEST SCORES FOR THE 16-17 YEAR AGE
GROUP OF NAVAHO INDIANS WITH STANDARDIZED
NORMS FOR THE WECHSLER ADULT INTELLI-
GENCE SCALE (ARIZONA AND NEW MEXICO)*

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A. PROBLEM

Educational literature today stresses the importance of understanding individual students. This understanding includes an estimate of intellectual capacity as obtained through the use of mental tests. Since 1893, when Binet was exploring the differences between bright and dull children, mental tests have gained momentum and are accepted today as "the most important single tool psychology has developed for the practical guidance of human affairs" (1, p. 101).

Over 25,000 Navaho Indians are now included among those students from whom estimates of intellectual capacity are needed. However, the basic assumption of similar acculturation, which is necessary in the use of standardized tests, cannot be applied to these students. Generally, their lives have been molded by years spent in a spacious, barren, unproductive reservation where superstition is yet paramount, where home is a one-room hogan, where disease is inflicted by displeased spirits. Under such conditions standardized test norms cannot be used for valid comparisons, and yet the need to measure the intellectual capacity of the Navaho still exists.

The purpose of this study was to compare the test scores for the 16-17 year age group of Navaho Indians with the standardized norms for the Wechsler Adult Intelligence Scale.

B. METHOD

The *WAIS* was administered to 50 Navaho males and 50 Navaho females 16 and 17 years of age between December 15, 1955, and October 15, 1956. A stratified sample was used with selections made according to the procedures employed by Wechsler with the exception of geographic region and possibly occupational level (the majority of Wechsler's subjects in this age group were students, as were ours). Age, sex, education, and urban-rural residence were made as comparable as possible.

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Educational classifications were made according to the grade in which the subjects were currently enrolled. Levels included 0-8 years, 9-11 years, 12 years, and 13-15 years. The proportion of males and females in each educational level was the same as the standardization group.

Duplicating Wechsler's procedure, urban areas were defined as communities with a population of 2,500 inhabitants or more with subjects classified as residents of that community in which they were attending school. It should be noted that this classification in terms of the size of the community in which subjects live only while attending school is rather artificial inasmuch as many of their homes are in rural areas. In the rural classification the subjects live at home throughout the entire year. Geographic regions were restricted to Arizona and New Mexico.

The scale was administered to each subject according to the standardized procedure outlined in the test manual with one exception. When subjects were in the lowest educational level, and in a few other cases where necessary, the first question on the information series was used to introduce the test instead of the fourth question as specified in the manual. All tests were administered in the school in which the subject was enrolled.

Statistical measures of skewness and kurtoses (g_1 and g_2) were computed and since these indicated that the sample did not depart from a normal distribution, critical ratios were used to measure the differences between the two groups on the Verbal, Performance, and Full Scale scores and on the subtests. The level of difficulty for each item was computed on all subtests with the exception of Digit Symbol which is essentially a speed test.

Because of unequal numbers of males and females tested at each educational level it did not seem feasible to compute sex differences.

C. RESULTS AND DISCUSSION

A comparison of the means of the scaled scores for the Navaho group with the means of the scaled scores for the standardization group consistently showed significant differences in favor of the standardization group on the Verbal, Performance, and Full Scale scores. Results are given in Table 1.

As is true in other studies of comparable cultural and bilingual groups there was a greater difference between the means of the Verbal Scales than the means of the Performance Scales (the Full Scale score is a summation of the Verbal and Performance scores). From this it would seem that the Verbal Scale is affected more by cultural factors than is the Performance Scale.

Table 2 compares the means of the scaled scores for the Verbal and Per-

formance subtests. As shown in this table the mean of the scaled scores for the Navaho group showed a slight though not significant superiority over the standardization group on the Block Design and Object Assembly subtests. It has been generally agreed that the Block Design is one of the best subtests of the entire scale. Wechsler (6, p. 92) states that it "seemingly

TABLE 1
COMPARISON OF MEANS OF SCALED SCORES FOR THE NAVAHO GROUP WITH THE STANDARDIZATION GROUP FOR VERBAL, PERFORMANCE, AND FULL SCALE SCORES

Scale	Standard- ization group	Navaho group	Difference	CR	<i>p</i>
Verbal Scale	54.59	38.93	15.66	9.93	<.001
Performance Scale	48.73	45.29	3.44	3.11	<.01
Full Scale	103.37	84.21	19.16	7.66	<.001

TABLE 2
COMPARISON OF MEANS OF SCALED SCORES FOR THE NAVAHO GROUP WITH THE STANDARDIZATION GROUP FOR VERBAL AND PERFORMANCE SUBTESTS

Subtests	Standard- ization group	Navaho group	Difference	CR	<i>p</i>
<i>Verbal subtests</i>					
Information	9.1	6.8	+2.3	7.44	<.001
Comprehension	9.3	6.6	+2.7	7.88	<.001
Arithmetic	9.0	6.8	+2.2	7.09	<.001
Similarities	9.4	6.0	+3.4	9.43	<.001
Digit Span	9.3	7.1	+2.2	6.60	<.001
Vocabulary	8.4	5.6	+2.8	9.07	<.001
<i>Performance subtests</i>					
Digit Symbol	9.9	9.0	+ .9	3.20	<.01
Picture Completion	9.4	8.0	+1.4	4.74	<.001
Block Design	9.7	9.8	— .1	.29	>.05
Picture Arrangement	10.3	8.5	+1.8	5.53	<.001
Object Assembly	9.4	10.0	— .6	1.83	>.05

measures much the same thing that verbal tests measure." Presumably this generalization is made because the Block Design test shows a fairly high correlation with the Verbal Scale. One possible interpretation of the relatively good showing of the Navaho group on the Block Design test might be that it is measuring intellectual ability in a manner that is comparatively uninfluenced by the cultural differences between the two groups. If this is true then it may be argued that this test would serve as a good culture free index of intellectual ability among the Navahos. Another possibility, of course, would be that the cultural patterning of the Navahos is such as to facilitate the increased ability shown on the Block Design test. The same

two possibilities would also apply to the Object Assembly test, however, it does not show the same empirical validity as Block Design.

Levels of difficulty were computed for each subtest with the exception of Digit Symbol. In contrast to the standardization group for which the items were arranged in increasing order of difficulty, there were marked fluctuations in the Navaho group on the following subtests: Information, Comprehension, Similarities, Vocabulary, Picture Completion, and Picture Arrangement.

On the other hand, Digit Span, Block Design, Object Assembly, and Arithmetic showed some consistent increases in level of difficulty with Digit Span and Block Design being the most consistent of the entire scale.

The lowered mean *IQ* scores of the Navaho group (88.54 for the Full Scale score, 84.01 for the Verbal Scale, and 95.35 for the Performance Scale) serve to emphasize the necessity of comparing Navaho students with members of their own culture if one is interested in obtaining the relative ability of these individuals. The possibility of developing and using additional culture free tests seems desirable. However, with the increasing educational opportunities of the Navahos, it would seem likely that a trend toward comparable conditions in home, school, and other "American" environments may eventually decrease cultural differences and hence the need for different measures of intelligence.

D. SUMMARY AND CONCLUSIONS

The Wechsler Adult Intelligence Scale was administered to 50 Navaho males and 50 Navaho females 16 and 17 years of age in order to compare the test scores of this group with standardized norms. Standardization methods used by Wechsler for age, sex, education, and urban-rural residence were followed as closely as possible.

As the sample did not depart from a normal distribution critical ratios were used to measure the differences between the Verbal, Performance, and Full Scale scores as well as the differences between each subtest. Scaled scores were used in all instances. Levels of difficulty were computed for each item on each subtest with the exception of Digit Symbol.

From the results obtained, the following conclusions were made:

1. The Navaho group scored significantly lower than the standardization group on the Verbal, Performance, and Full Scale scores.
2. There was a greater difference between the means of the Verbal Scale than of the Performance Scale.
3. The Navaho group did slightly better on Block Design and Object

Assembly than the standardization group. This finding was interpreted as probably resulting from tests which were relatively independent of cultural differences between the Navahos and the standardization group.

4. As emphasized by other investigators, valid comparisons of intellectual ability can be made only within a culture and not between cultures.

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A COMPARISON OF ATTITUDE SCORES OF SOME POLITICO-ECONOMIC ISSUES BETWEEN TWO SAMPLES OF COLLEGE STUDENTS IN ORISSA, INDIA, AFTER AN INTERVAL OF FOUR YEARS*

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A. INTRODUCTION

In the last decade or so there have been rapid changes in the political and economic fields of India. These changes are bound to have repercussions in the ideologies and attitudes of people. Now India is passing through a transitional period of history which is working as a bridge between the old and the new. So it would be extremely interesting to study systematically the rapidly changing attitudes and ideologies of people who are consciously or unconsciously making history.

In order to make a systematic study of the change of attitudes of college students over several years the writer started his first investigation in 1952 (1), and drew certain conclusions from the distribution of responses of about 800 college students to 16 politico-economic issues. The investigator using the same questionnaire on a five-point scale has tried to measure the attitudes of another group of about 450 college students after four years from the same institutions, and compare the results of this sample with those of the 1952 investigation. It would have been more interesting to get the same population again after a lapse of four years but it was not possible. Even then it would be interesting to compare the responses of these groups of students after four years. It is planned to continue this kind of investigation after an interval of three to four years extending over several years to have some idea about the change and development of attitudes among the student population according to internal and international changes.

B. PROBLEM

The main purpose of the present investigation is to assess the attitudes of some college students (of Orissa) towards some 16 politico-economic issues and compare the results with those of the 1952 group using the same ques-

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tionnaire formulated on a five-point scale. It is presumed that responses distributed on a five-point scale extending from the most favourable to most unfavourable attitudes with an undecided middle will give a better idea of the intensity of feeling or tendency to act with regard to a particular issue. Compared to the 'Yes' and 'No' type of questionnaire which may give a superficial expression of opinion this type of questionnaire is supposed to tap the attitudes of subjects by giving them an opportunity to think and decide in five different ways.

Besides knowing the general distribution of attitudes of about 450 college students of the year 1956 an attempt has been made to compare these responses with those of the 1952 group. It may be relevant to note here that the institutions remain the same for both the samples but the two populations from which the samples are drawn are different after a lapse of four years. Thus the following hypotheses for this investigation may be formulated:

First Hypothesis: If the distribution of scores derived from a set of statements arranged on a five-point scale and graded gradually from most favourable to most unfavourable with an undecided middle on a particular issue will be statistically significant then they may be accepted as indicating a trend of attitudes. In other words the null-hypothesis to the above assumption will be that if the subjects give their answers haphazardly without understanding the significance of the statements on the issue or without paying careful attention to them then the scores derived from such a set of attitude tests will be randomly distributed.

Second Hypothesis: The second hypothesis may be formulated that the distributions of scores of the present group do not differ significantly from those of the first group tested in 1952. In that case it can be reasonably inferred that in these institutions the student populations of 1952 and 1956 do not differ from each other with regard to their attitudes to specific issues under investigation.

C. PROCEDURE

A set of five statements graded from most favourable to most unfavourable attitudes towards a particular issue was formulated. With regard to each issue the first two statements expressed favourable and the last two unfavourable attitudes whereas the middle one indicated uncertainty and indecisiveness in the matter. Two examples are given below for illustration:

(a). Attitudes towards Marxism

1. I am very much in favour of Marxism as a philosophical system.
2. I am moderately in favour of Marxism as a philosophical system.
3. I am uncertain about Marxism as a philosophical system.
4. I am moderately opposed to Marxism as a philosophical system.
5. I am very much opposed to Marxism as a philosophical system.

(b). Attitudes towards American influence

1. I think, American influence is absolutely good and beneficial for our country at present.
2. I think, on the whole American influence is quite good, although it might have some dangers for our country.
3. I am uncertain about the consequences of American influence in our country at present.
4. I think, on the whole American influence is dangerous, although it may have some advantages.
5. I think, American influence is quite dangerous and harmful for our country at present and it has absolutely no advantage at all.

In the similar manner statements were formulated on various issues. Before the first investigation was made about 50 important issues concerning social, political, economic, and cultural problems were selected for study. In order to pre-test them for comprehensibility the statements were given to a small group of students to answer and also shown to professors of Economics, English, and Psychology for their suggestion. According to their suggestions some of them had to be modified and reformulated. The number of issues were also reduced to 30 so that the subjects could comfortably answer them in an hour. All these statements along with detailed instructions for answering them were printed. The items were arranged in such a way that two similar problems did not appear successively. For example, after Marxism attitude towards Communism or Russian influence did not appear. This was done to prevent the development of a habit to cross a particular statement from two similar sets mechanically. The subjects were instructed to put a cross against the statements acceptable to them. They were not required to give their name or rôle numbers lest they hesitate to give their real opinion. The booklets containing these statements were given to groups of students in the presence of the investigator and collected after completion. The tests were administered to college students irrespective of their class and subjects. This procedure was followed in both the investigations.

Out of 30 only 16 issues concerning political and economic problems had been taken into consideration in the present paper. Other 14 items dealing

with social and cultural issues will be discussed in a separate paper. These 16 issues discussed here have been grouped under three different heads such as—(a) Foreign powers and their influence, (b) Internal politico-economic issues, and (c) Purely economic issues—for an easy comparison and computation of results.

The distribution of test scores of the subjects has been calculated in percentages and the significance of its distribution has been examined by the help of χ^2 test. The scores obtained from the subjects of the present investigation have been given along with the scores of the last investigation in percentages in Table 1 a, b, and c. In the same table the χ^2 values of each set of scores are also presented. Then both the sets of scores that is, the scores obtained in 1952 and 1956 have been compared and their χ^2 results have also been given in the same table.

In order to test the reliability of the questionnaire a group of 70 subjects were retested after an interval of two weeks with the help of the same questionnaire. The correlations for retest reliability are also given in the same table.

D. DISCUSSION OF RESULTS

Tables 1-3 give the attitude scores measured on a five-point scale in percentages and the χ^2 values of their distributions. Before the scores are accepted as representing any trend of attitudes the significance of their distribution should be statistically examined. It can be conceived that the subjects without seriously judging the statements and giving their real opinion might have put crosses against certain statements at random. If this is so the scores over all the five points will be randomly distributed and the χ^2 values of the distribution will not be significant. But this is not so. All the χ^2 values calculated separately for each of the 16 issues are highly significant. The required χ^2 value at one per cent level should be 13.8 but the smallest χ^2 value in this table is 86.78 for 'Russia not to be blamed for another war'. The largest among them is as high as 641.6 for the members of the Congress Party. Thus all the χ^2 values given in the table for different issues are much larger than the expected value at one per cent level. On the basis of these data the first null-hypothesis that the attitude test scores distributed on a five-point scale are randomly distributed may be rejected and it can be safely concluded that these scores do indicate a significant trend of attitudes of the sample.

In respect to all other issues except for the Socialists the χ^2 values of two sets of scores (1952 and 1956 samples) are statistically significant. This means both the groups differ significantly from each other with regard to

TABLE 1
ATTITUDE SCORES OF BOTH THE SAMPLES GIVEN IN PERCENTAGES AND THE CHI. SQ. VALUES OF DISTRIBUTION OF SCORES OF BOTH
THE SAMPLES IN THE FIVE POINT ATTITUDE SCALE

Foreign Powers and their influence	Year	1.	2.	3.	4.	5.	Chi sq. of distribu- tion	Level of signifi- cance	Chi sq. values between the samples	Level of signifi- cance	Retest corre- lation	Level of signifi- cance
		Most favourable	Moderately favourable	Undecided	Moderately unfavourable	Most unfavour- able						
1. American Influence	1952.	7.0	25.4	10.9	38.7	17.8	251.41	.01	34.69	.01 abv.	0.35	.01
	1956.	4.2	20.6	12.0	52.3	10.7	327.89	.01				
2. Russian Influence	1952.	17.2	25.0	17.2	25.4	15.1	37.04	.01	37.54	Do.	0.52	.01
	1956.	24.4	37.7	13.2	19.6	3.9	154.54	.01				
3. British Influence	1952.	4.9	18.1	8.7	37.3	30.8	302.33	.01	28.74	Do.	0.54	.01
	1956.	5.5	24.8	8.4	43.1	18.1	129.40	.01				
4. America not to be blamed for another war.	1952.	7.9	13.3	19.8	28.0	30.8	145.75	.01	24.77	Do.	0.42	.01
	1956.	3.3	13.5	13.9	35.9	32.9	179.40	.01				
5. Russia not to be blamed for another war.	1952.	19.5	26.4	24.1	17.4	12.6	46.80	.01	25.47	Do.	0.68	.01
	1956.	26.6	32.7	16.6	17.0	6.9	86.75	.01				
6. War against Pak- istan	1952.	23.3	14.0	13.4	18.2	31.1	84.97	.01	11.15	.05 -.02	0.57	.01
	1956.	16.3	9.3	10.8	21.2	42.0	156.3	.01				

R. RATH

TABLE 2

Internal Political issues	Year	1.	2.	3.	4.	5.	Chi sq. of distribution	Level of significance	Chi sq. values between the samples	Level of significance	Retest correlation	Level of significance
		Most favourable	Moderately favourable	Undecided	Moderately unfavourable	Most unfavourable						
1. Marxism	1952.	25.0	23.0	31.3	9.2	11.5	130.43	.01	10.56	.05-.02	—0.04	Nil.
	1956.	20.4	22.6	37.3	9.3	10.0	119.04	.01				
8. Communism	1952.	17.2	19.7	22.4	25.8	14.9	28.16	.01	25.90	.01 abv.	0.71	.01
	1956.	7.7	19.4	20.7	38.0	13.7	115.41	.01				
9. Communists	1952.	13.5	27.4	31.6	16.0	11.4	122.89	.01	18.01	Do.	0.64	.01
	1956.	6.6	29.7	35.4	20.0	8.1	148.20	.01				
10. Socialists	1952.	7.1	30.9	40.4	11.8	9.8	339.82	.01	8.21	.10-.05	0.43	.01
	1956.	6.3	30.3	46.4	9.6	7.0	145.60	.01				
11. Members of the Congress Party	1952.	8.4	51.4	16.0	14.1	10.1	490.32	.01	35.66	abv. .01	0.78	.01
	1956.	8.9	67.2	9.6	10.5	3.5	641.60	.01				
12. Present day Administration	1952.	12.8	37.3	8.1	22.1	19.7	195.42	.01	9.45	.05	0.63	.01
	1956.	15.0	37.7	6.6	25.6	14.5	130.30	.01				
13. Princely States	1952.	4.9	13.4	28.4	15.2	38.1	267.69	.01	17.06	abv. .01	0.49	.01
	1956.	3.5	13.6	35.4	18.0	29.2	146.49	.01				
14. Working of Democracy in India	1952.	6.2	36.1	12.1	33.9	11.3	300.93	.01	44.24	Do.	0.46	.01
	1956.	8.3	55.6	8.5	22.2	5.0	390.39	.01				

TABLE 3

Politico-economic issues	Year	1.	2.	3.	4.	5.	Chi sq. of distribution	Level of significance	Chi sq. values between the samples	Level of significance	Retest correlation	Level of significance
		Most favourable	Moderately favourable	Undecided	Moderately unfavourable	Most unfavourable						
15. Zamindari (landlord) system	1952.	4.4	15.6	6.9	31.1	42.0	401.90	.01	16.84	abv. .01	0.60	.01
	1956.	3.7	17.9	4.8	39.2	33.9	243.39	.01				
16. Nationalisation of industries, banks, etc.	1952.	48.7	28.0	10.7	8.8	3.8	533.73	.01	16.12	abv. .01	0.37	.01
	1956.	46.0	38.2	8.8	4.4	2.4	385.40	.01				

$df = 4.$

Chi sq. value at 0.01 level = 13.28.

Chi sq. value at 0.05 level = 9.49.

their attitudes to these 15 issues. Thus the second null-hypothesis which presumed that both the samples have no difference in their trend of attitudes is rejected excepting for the Socialists. The scores of two samples are almost similar with regard to the Socialists. It is interesting to note that there are positive and significant correlations between the test and retest scores of all the tests excepting one. In regard to Marxism as a philosophical system the retest correlation is not significant. Just possibly the subjects do not have a clear and definite idea in regard to this issue so there is no consistency in the two answers.

Having compared the distributions of the samples with regard to their differences and determined the retest reliability of the questionnaire it would now be interesting to see the nature and direction of this shift of attitude.

Taking into consideration the desirability of the three big foreign powers' influence in India it is noticed that the trend in favour of American influence has declined whereas this trend for the Russian and British influence has increased. Again compared to the British the Russians have gained more in their favour. When the British have gained only 0.6 per cent under the most favourable category and the Americans have lost 2.8 per cent the Russians have gained by 7.2 per cent. Of course, in 1952 also the Russians had more people under this category namely 17.2 per cent compared to 7.0 for the Americans and 4.9 for the British. Similarly under the category of moderately favourable group there is a loss of 4.8 per cent for the Americans whereas there is a gain of 6.6 per cent for the British and 13.7 per cent for the Russians. The percentage of the undecided group has almost remained the same for the British, increased 1.1 per cent for the Americans, and decreased by 4 per cent for the Russians. When the unfavourable attitude is considered the opposite trend is also noticed in the subjects with regard to their attitudes towards the Americans and the Russians, under the moderately unfavourable category. The percentage has increased from 38.7 to 52.3 for the Americans and decreased from 25.4 to 19.6 per cent for the Russians under this category. There is also an increase from 37.3 to 43.1 per cent for the British under this head. There has been a systematic fall in the percentage of subjects for all the three powers under the category of most unfavourable attitude, the fall being highest for the Russians from 15.1 to 4.0 per cent. Thus the number favouring the Russian influence in India for the good of the country has systematically increased with a corresponding fall in the number under the undecided and unfavourable heads but an opposite trend has been noticed for the American influence. This kind of polarity in the attitudes of the sample towards the leaders of the two opposing camps of the world is not unexpected.

A similar trend has also been noticeable for the two big powers in regard to their responsibility for another war. The number of people accusing America for a greater responsibility in causing another war has increased and the percentage of the people not blaming for this has decreased systematically from 1952 to 1956 group. The size of the undecided group in both cases has also decreased pushing more people to either end. In this field also the Russians have gained more favour as a peaceful nation. This fact adds a strong evidence to the proof of the reliability of the tests. It may not be irrelevant here to make a reference to another investigation made by the same author on stereotypes of freshmen and service holders for these foreign nationalities in 1955 (2). In that study also the Russians were described as peace-loving whereas the Americans were described as war-mongering.

Interestingly enough in spite of a greater tension between India and Pakistan in 1956 on the Kashmir issue compared to 1952, more subjects are opposed to a war against Pakistan in 1956. The percentage of subjects favouring a war against Pakistan has decreased from 23.3 to 16.4 per cent in the first category and from 14.0 to 9.3 per cent in the second category. The undecided group has also decreased from 13.4 to 10.9 per cent. The subjects under the category of moderately unfavourable and most unfavourable have increased from 18.2 to 21.2 per cent and 13.1 to 42.0 per cent respectively.

Coming to internal political issues the proportion of subjects of the 1956 sample most favourable or most unfavourable to Marxism, Communism, Communists, and Socialists has decreased and the proportion of subjects favouring these ideas moderately has almost remained the same. Except for Communism where there is a slight decrease in the undecided group there has been a regular increase in this category for the other three issues. The number of people moderately opposed to Socialists has decreased by about 2 per cent whereas for all the other issues there has been a definite increase under this category. In other words, considering the general tendency for these four political problems a larger percentage of subjects have avoided both the extremes as well as the favouring sides and clustered under the undecided and the moderately favourable categories. But the attitude scores for the members of the Congress Party follow a different line. The most favourable group which was very small in 1952 almost remains the same also in 1956 and there is a systematic decrease under the undecided, moderately unfavourable, and most unfavourable categories. The highest increase of 15.8 per cent from 51.4 to 67.2 per cent has been noted for this group under the moderately favourable category which again had the maximum score

also in 1952. Interestingly enough the same trend found for the members of the Congress Party is also noticed for an issue like the working of democracy in India. Like the scores for the members of the Congress Party there is a slight increase under the most favourable category, very much increase under the moderately favourable category where as a systematic decrease under the other three heads, namely the undecided, moderately unfavourable, and very much unfavourable. This remarkable consistency in the trend between the two samples belonging to different periods of time with regard to political parties and their philosophies is certainly very interesting from the political standpoint of the country.

For the issue like the present day administration there is a slight increase under the most favourable and moderately unfavourable categories, and there is a decrease under the undecided and most unfavourable categories, whereas the moderately favourable category has remained the same.

The issue concerning the Princely states is quite an old one so the attitudes of the present sample may be a little vague and confusing. The percentage for both the extreme categories has decreased whereas there is a rise under the undecided and moderately unfavourable group. The moderately favourable group has remained constant.

There are only two problems under the heading of politico-economic issues (Table 3). The scores under the two extremes as well as the undecided category for the Zamindary system and Nationalisation of industries, banks, etc., have decreased. There is a rise in percentage for both the issues under the category of moderately favourable attitude. But the percentage score under the moderately unfavourable category has increased by 8 per cent for the Zamindary system and decreased by 4.4 per cent for the Nationalisation of industries, banks, etc. When the general trend of attitudes for these two issues is considered it is noticed that there is almost no change in trend for the Zamindary system. On the favouring side there were 20 per cent of subjects and on the disfavouring side 73.1 per cent for Zamindary system in 1952 and in the 1956 sample there are 21.6 per cent on the favouring side and 73.1 per cent also on the disfavouring side. This kind of close similarity in the trend is really very remarkable. It is not also unexpected to get some such results because during the last four years no noticeable change of policy has taken place in regard to this issue whereas there is definitely greater emphasis on Nationalisation of industries, banks, etc. The percentage of subjects favouring nationalisation has increased from 76.7 to 84.2 per cent—a rise of 7.5 per cent in four years. The percentage on the disfavouring side has decreased from 12.6 to 6.8 per cent. The group sitting on the fence has also decreased from 10.7 to 8.8 per cent.

E. SUMMARY AND CONCLUSION

The purpose of this investigation was to assess the attitude of some college students of Orissa (an Indian State) towards 16 politico-economic issues during the year 1956 and compare the distribution of attitude scores with those of another group studied in 1952. Both the samples were drawn from the same institutions though the populations were different. About 450 students participated in this investigation. The distribution of test scores on a five-point scale was calculated in percentages and its significance examined by the help of χ^2 test. The distribution of attitude scores did give an indication of the trend of attitudes of the present sample because the distribution of scores on a five-point scale was not proved to be random. Then the distributions of both the samples towards each issue were compared and the significance of their difference was also similarly tested. The difference between the two sets of scores obtained from the two samples after an interval of four years was statistically significant in all cases except for the Socialists, so the trends of the two samples in regard to 15 issues were proved to be different from each other. The retest coefficient correlations of all the tests except the one for 'Marxism as a philosophical system' were highly significant.

There has been a good consistency in the shift of attitudes of the present sample. For example as there has been a shift of opinion in favour of Russia there has also been a corresponding change against the United States of America. Similar shifts in trends have been observed with regard to others.

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STUDY IN STEREOTYPES OF COLLEGE FRESHMEN AND
SERVICE HOLDERS IN ORISSA, INDIA, TOWARDS
THEMSELVES AND FOUR OTHER
FOREIGN NATIONALITIES*

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A. INTRODUCTION

The study of stereotypes has become quite popular among the social Psychologists now-a-days. In the present-day world there is so much emphasis on international understanding that studies on stereotypes, attitudes, prejudice, etc., are bound to be popular and fruitful. Stereotypes are socially conditioned habits of thought acquired by the people from the common stock of widely prevalent and readily available verbalised concepts. This tendency of people to describe themselves and other people in over-simplified terms is very important in understanding the national and racial interrelationship. For the last few years India has been playing a very important rôle in the arena of international politics and as a result of this at least the educated population of the country is gradually getting acquainted with the other peoples of the world. Their familiarity with the peoples of other countries is usually based on newspaper reports and hearsay. Very few people actually come in contact with foreign peoples directly, so most probably the stereotypes held by these Indians are not based on the real stimulus value of the other groups. So it would be interesting to make a systematic study of these psycho-social phenomena found in different groups of the Indian population. This curiosity stimulated the investigators to take up this kind of study.

B. PROBLEM

The present study has made attempts to assess the verbalised mental pictures of 100 college freshmen and 100 service holders with regard to themselves as a national group and four other foreign peoples who are politically and culturally important in the international field. American, British, Russian, and Chinese are the four foreign nationalities about which the educated

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mass of India is getting some news and also to some extent influence them and in turn is being influenced by them more and more every day. A good comparison can be made between their mental pictures towards the foreigners and their ideas about themselves as a national group namely Indian.

Attempts have also been made to find out if there is any difference between the stereotypes held by the first-year students and the individuals who are already settled in life earning their own livelihood. Since the second group is more experienced and more matured than the first one there should be some difference between them in having stereotypes towards themselves and others. In a similar investigation made by the investigators (3) the rank correlation between the two sets of stereotypes held by these two groups was invariably found to be significant and the average scores of the outsiders were in almost all cases higher than those of the freshman group. In other words both the groups though they differed in age, experience, and many other conditions of life came very close in using the same type of adjectives for themselves as a linguistic group and six other out groups living inside the country. They did not differ in their mental pictures with regard to people with whom they have opportunities to come in contact daily, and it would be very interesting to know whether they would differ in stereotyping foreigners with whom either of the two groups has remote chance to know directly. So it is not unreasonable to assume that both the groups are less likely to reflect the "Social stimulus value" of the other group which is stereotyped, and in that case their generalised and oversimplified mental pictures are nothing but "a function of contact with the stereotype rather than contact with the members of the group" (2). Whatever may be the explanation it would be very interesting to compare the scores of the two groups.

C. SUBJECTS

One hundred college first-year students were selected to form the College Freshman group. Another group of 100 individuals was selected at random from among the service holders having a minimum qualification of Matriculation. All the subjects forming both the groups were permanent residents of the state of Orissa and could read, write, and speak the language of the State, namely Oriya. The average age of the freshman group was 16 years 9 months whereas the average age of the outsider group was 29 years 8 months.

D. PROCEDURE

A list of 60 important attributes or trait names was selected out of 100 common adjectives after a discussion with the professors of literature and

pre-test. The subjects were instructed to read the attributes carefully and select such traits which according to them would correctly describe the characteristics of the different groups given in a booklet. They were required to give the serial number of the attributes in the blank space just below each nationality. The adjectives were arranged alphabetically and there were as many favourable traits as unfavourable ones. The adjectives were written in Oriya with English synonyms. After selecting their own list of attributes for each of the groups they were also asked to mention any other appropriate adjectives which were not given in the list.

The subjects were not required to give their names and addresses, so that they would feel free to give their answers without any hesitation or feeling of embarrassment. The outsiders were approached by some psychology students who collected these forms from them after a day or two. The students in the class were not allowed to consult each other in filling up the form. The outsiders were also requested not to do so but on behalf of the latter no guarantee can be given in this respect. On the whole the procedure followed here was almost similar to one used by Prothro (2) and Gilbert (1) in their studies of stereotypes.²

E. COMPUTATION OF DATA

For the present study all the traits checked by at least 20 per cent of the subjects of either group have been listed. In Table 1 the percentages of scores are given for each group separately with differences in percentage points. The total percentage for both the groups is also given separately in the same table to indicate the general tendency of the total sample of 200 subjects. If the scores of the service holders are higher than the students then the difference is marked plus and if less it is marked minus. If any trait has been checked by less than 20 per cent of subjects in either group but the aggregate of scores of both the groups comes to a minimum of 20 per cent then it is included in the list of preferred traits. If the rank correlation is significant then the two samples have the same tendency in stereotyping the nationalities under investigation. In other words the order of preference of different traits of both the groups with regard to the nationalities remains almost the same. The correlation means and mean differences of the groups have been given in Table 2.

In Table 3 the first five traits selected by the total sample consisting of 200 subjects have been given in order of position to indicate the five most important stereotype traits for each group.

²The authors acknowledge their indebtedness to Prof. E. T. Prothro for his kind suggestion and help.

TABLE 1
FREQUENCIES OF STEREOTYPES GIVEN IN PERCENTAGES

Sl. No.	Attributes	Students	Outsiders	Difference	Total
<i>Indian</i>					
1.	Idle	37	29	— 8	33
2.	Easily satisfied	42	49	+ 7	45.5
3.	Hospital	57	75	+18	66
5.	Idealistic	60	61	+ 1	63.5
6.	Backward	24	32	+ 8	28
10.	Aspirant	42	40	— 2	41
11.	Apathetic	27	35	+ 8	31
16.	Artistic	51	69	+18	60
18.	Dutiful	38	40	+ 2	39
25.	Homesick	35	46	+11	40.5
26.	Service minded	27	30	+ 3	28.5
32.	Religious	73	86	+13	79.5
34.	Innocent	40	55	+15	47.5
35.	Sincere	26	31	+ 5	28.5
36.	Industrious	17	26	+ 9	21.5
38.	Faithful	26	49	+13	37.5
41.	Gentle	27	41	+14	34
43.	Sentimental	21	44	+23	32.5
47.	Friendly	22	47	+25	34.5
52.	Peace loving	61	78	+17	69.5
53.	Calm	33	44	+11	38.8
54.	Cultured	32	57	+25	44.5
58.	Literary	39	45	+ 6	42
<i>American</i>					
3.	Hospitable	23	32	+ 9	27.5
5.	Idealistic	46	39	— 7	42.5
8.	Egoistic	24	30	+ 6	27
10.	Aspirant	60	56	— 4	58
14.	Passionate	28	26	— 2	27
15.	Crooked	25	28	+ 3	26.5
16.	Artistic	25	17	— 8	21
17.	Diplomat	50	56	+ 6	53
18.	Dutiful	31	36	+ 5	33.5
31.	Showy	18	25	+ 7	21.5
35.	Sincere	26	31	+ 5	28.5
36.	Industrious	48	51	+ 3	49.5
41.	Gentle	36	33	— 3	34.5
42.	Formal	17	35	+18	26.5
46.	Polished	24	43	+19	33.5
47.	Friendly	19	33	+14	26
49.	War monger	31	55	+24	43
50.	Militaristic	36	32	— 4	34
51.	Wire puller	16	25	+ 9	20.5
54.	Cultured	33	37	+ 4	35
55.	Brave	26	39	+13	32.5
56.	Opportunist	18	35	+17	26.5
57.	Smart	37	39	+ 2	38
<i>Russian</i>					
3.	Hospitable	31	35	+ 4	33
5.	Idealistic	50	46	— 4	48
10.	Aspirant	58	62	+ 4	60
16.	Artistic	25	16	— 9	20.5

TABLE 1 (continued)

Sl. No.	Attributes	Students	Outsiders	Difference	Total
17.	Diplomat	42	50	+ 8	46
18.	Dutiful	49	50	+ 1	49.5
22.	Grave	16	28	+12	22
35.	Sincere	30	42	+12	36
36.	Industrious	49	69	+20	59
41.	Gentle	23	35	+12	29
46.	Polished	18	29	+11	23.5
50.	Militaristic	22	32	+10	27
52.	Peace loving	29	26	- 3	27.5
54.	Cultured	24	45	+21	34.5
55.	Brave	40	47	+ 7	43.5
57.	Smart	31	20	-11	25.5
<i>British</i>					
3.	Hospitable	22	21	- 1	21.5
5.	Idealistic	43	41	- 2	42
8.	Egoistic	31	50	+19	40.5
10.	Aspirant	57	70	+13	63.5
14.	Passionate	25	27	+ 2	26
15.	Crooked	37	41	+ 4	39
16.	Artistic	31	30	- 1	30.5
17.	Diplomat	61	85	+24	73
18.	Dutiful	37	72	+35	54
22.	Grave	28	41	+13	34.5
35.	Sincere	21	51	+30	36
36.	Industrious	44	69	+25	56.5
39.	Traitor	24	20	- 4	22
41.	Gentle	28	37	+ 9	32.5
42.	Formal	27	36	+ 9	31.5
45.	Drunkard	34	27	- 7	30.5
46.	Polished	23	43	+20	33
49.	War monger	23	32	+ 9	27.5
50.	Militaristic	29	28	- 1	28.5
51.	Wire puller	15	29	+14	22
54.	Cultured	34	56	+22	45
55.	Brave	35	50	+15	42.5
56.	Opportunist	24	42	+18	33
57.	Smart	34	54	+20	44
58.	Literary	25	39	+14	32
<i>Chinese</i>					
3.	Hospitable	43	47	+ 4	45
5.	Idealistic	25	34	+ 9	29.5
10.	Aspirant	31	33	+ 2	32
16.	Artistic	35	48	+13	41.5
18.	Dutiful	45	37	- 8	41
32.	Religious	31	33	+ 2	32
35.	Sincere	26	36	+10	31
36.	Industrious	40	50	+10	45
38.	Faithful	25	31	+ 6	28
41.	Gentle	27	27	0	27
47.	Friendly	20	31	+11	25.5
52.	Peace loving	23	39	+16	31
53.	Calm	19	23	+ 4	21
54.	Cultured	26	45	+19	35.5
55.	Brave	27	20	- 7	23.5

TABLE 2

Sl. No.	Nationalities	Traits selected			Student's mean	Outsider's mean	Difference $M^2 - M^1$	Rank correlation	Level of significance
		No. of good traits	No. of bad traits	Total					
1.	Indian	18	5	23	37.5	48.2	+10.7	0.66	0.01
2.	American	14	9	23	30.4	36.2	+ 5.8	0.61	0.01
3.	Russian	15	1	16	33.5	39.5	+ 6.0	0.72	0.01
4.	British	15	10	25	31.7	43.6	+11.9	0.59	0.01
5.	Chinese	15	0	15	29.6	35.6	+ 6.0	0.58	0.01

TABLE 3

THE FIRST FIVE STEREOTYPE TRAITS FOR EACH OF THE GROUPS IN ORDER OF FREQUENCIES FROM THE TOTAL PERCENTAGE OF THE TWO GROUPS

No.	Sl. No.	Attributes	Percentage	
I. Indian				
1.	32.	Religious	79.5	Average 67.7
2.	52.	Peace loving	69.5	
3.	3.	Hospitable	66.0	
4.	5.	Idealistic	63.5	
5.	16.	Artistic	60.0	
II. American				
1.	10.	Aspirant	58.0	Average 49.2
2.	17.	Diplomat	53.0	
3.	36.	Industrious	49.5	
4.	49.	War monger	43.0	
5.	5.	Idealistic	42.5	
III. Russian				
1.	10.	Aspirant	60.0	Average 52.5
2.	36.	Industrious	59.0	
3.	18.	Dutiful	49.5	
4.	5.	Idealistic	48.0	
5.	17.	Diplomat	46.0	
IV. British				
1.	17.	Diplomat	73.0	Average 58.3
2.	10.	Aspirant	63.5	
3.	36.	Industrious	56.5	
4.	18.	Dutiful	54.5	
5.	57.	Smart	44.0	
V. Chinese				
1.	3.	Hospitable	45.0	Average 39.0
2.	16	Artistic	41.5	
3.	18.	Dutiful	41.0	
4.	54.	Cultured	35.5	
5.	32.	Religious	32.0	
	10.	Aspirant		

In Table 4 the attributes have been arranged according to the number of times of their occurrence in relation to various groups. This is done only to give a general picture of cluster of traits in relation to different groups and also classification of groups with regard to various attributes.

F. RESULTS AND DISCUSSION

1. *Indian*

Out of 60 adjectives as many as 23 have been selected for themselves as a national group. There are only six derogatory traits like idle, backward, apathetic, homesick, service minded, and sentimental whereas there are 18 admirable traits such as easily satisfied, hospitable, idealistic, aspirant, artistic, dutiful, religious, innocent, sincere, industrious, faithful, gentle, friendly, peace loving, calm, cultured, and literary. According to the subjects it is only the Indians who are idle, easily satisfied, backward, apathetic, homesick, service minded, innocent, and sentimental. No other nationality included here has been described to have any of these qualities. The Indians are supposed to be like Chinese in being religious and calm and like the British in being literary. According to the subjects Indians are friendly like the Americans and Chinese and peace loving like the Russians and Chinese.

When the total scores of both the groups numbering 200 subjects are taken into consideration religious, peace loving, hospitable, idealistic, and artistic are the five most important traits ascribed to Indians. There is not a single derogatory trait in this group of first five traits.

The most interesting result worthy of note here is the significant rank correlation between the two sets of scores. This means both agree in ascribing the same kind of attributes to their own national group. So it can be reasonably said that both the groups draw from the same stock of ideas about themselves commonly prevalent in the general population or at least in the educated population.

It may be relevant to note here that the average score of the service holders are higher than the average score of the students by 10.7 per cent (Table 2). Throughout this investigation the average for the service holders has been invariably higher than those of the student group. This is rather interesting but it is difficult to give any definite reason for this.

2. *American*

Out of the 23 traits selected for the Americans there are 10 derogatory attributes namely egoistic, passionate, crooked, diplomatic, showy, formal,

TABLE 4

Sl. No.	Attributes	Reference groups			
(a). Traits not selected at all					
4.	Shabby				
7.	Unpolished				
9.	Inefficient				
12.	Anti Oriya				
13.	Miserly				
19.	Rude				
20.	Bad				
21.	Flatterer				
23.	Rowdy				
24.	Proud				
27.	Mean				
28.	Cheat				
29.	Bluff				
30.	Swindler				
33.	Cruel				
37.	Jealous				
40.	Idiot				
44.	Coward				
48.	Effeminate				
59.	Bribe takers				
60.	Greedy				
					Total number 21
(b). Traits selected only once					
1.	Idle	Indian			
2.	Easily satisfied	Do.			
6.	Backward	Do.			
11.	Apathetic	Do.			
25.	Homesick	Do.			
26.	Service minded	Do.			
31.	Showy	American			
34.	Innocent	Indian			
39.	Traitor	British			
43.	Sentimental	Indian			
45.	Drunkard	British			
					Total number 11
(c). Traits selected only twice					
8.	Egoistic	American	British		
14.	Passionate	Do.	Do.		
15.	Crooked	Do.	Do.		
22.	Grave	Russian	Do.		
32.	Religious	Indian	Chinese		
38.	Faithful	Do.	Do.		
42.	Formal	American	British		
49.	War monger	Do.	Do.		
51.	Wire puller	Do.	Do.		
53.	Calm	Indian	Chinese		
56.	Opportunist	American	British		
58.	Literary	Indian	British		
					Total number 12
(d). Traits selected only thrice					
17.	Diplomat	American	Russian	British	
46.	Polished	Do.	Do.	Do.	
47.	Friendly	Indian	American	Chinese	
50.	Militaristic	American	Russian	British	
52.	Peace loving	Indian	Do.	Chinese	
57.	Smart	American	Do.	British	
					Total number 6

TABLE 4 (*continued*)

Sl. No.	Attributes	Reference groups				
<i>(e). Traits selected four times</i>						
55.	Brave	American	Russian	Chinese	British	Total No. 1
<i>(f). Traits selected five times</i>						
3.	Hospitable	Indian	American	Russian	Chinese	British
5.	Idealistic	Do.	Do.	Do.	Do.	Do.
10.	Aspirant	Do.	Do.	Do.	Do.	Do.
16.	Artistic	Do.	Do.	Do.	Do.	Do.
18.	Dutiful	Do.	Do.	Do.	Do.	Do.
35.	Sincere	Do.	Do.	Do.	Do.	Do.
36.	Industrious	Do.	Do.	Do.	Do.	Do.
41.	Gentle	Do.	Do.	Do.	Do.	Do.
54.	Cultured	Do.	Do.		Do.	Do.
Total						60

war monger, militaristic, wire puller, and opportunist. The other 13 good qualities are hospitable, idealistic, aspirant, artistic, dutiful, sincere, industrious, gentle, polished, friendly, cultured, brave, and smart. It is only the Americans who are considered to be showy and they share with the British in being egoistic, formal, and opportunist. They are also supposed to be formal, diplomatic, nationalistic, and smart like the British and Russians and friendly like the Indians and Chinese.

Among the five most important attributes ascribed to the Americans, diplomatic and war mongering are the two derogatory traits and the remaining three like aspirant, industrious, and idealistic are the desirable ones. Here also the average scores of the outsiders are higher than that of the student group by 5.8 per cent. The rank correlation of the two sets of scores is significant at one per cent level. This shows again that both the groups have similar stereotypes with regard to the Americans.

3. Russians

Out of the 16 adjectives selected for the Russians diplomatic and militaristic are the only two derogatory traits attributed to them compared to 10 such traits for the Americans. The Russians are described to have 14 good traits out of 16 namely hospitable, idealistic, aspirant, artistic, dutiful, grave, sincere, industrious, gentle, polished, peace loving, cultured, brave, and smart. The most important five traits selected by the total group include only one bad trait like diplomatic compared to two such attributes for the Americans, who are supposed to be war mongers besides being diplomatic.

The Russians have not been attributed any single quality which is unique to them as a nationality. They are grave like the British; diplomatic, polished, militaristic, and smart like the Americans and the British but peace loving like the Indians and Chinese.

Here also the rank correlation between the two sets of scores being 0.72 is significant at one per cent level. The mean scores of the service holders are as usual higher than those of the student group by 6.0 per cent.

4. *British*

The maximum number of attributes has been attributed to the British. Out of 60 as many as 25 have been selected for them and of these 11 are derogatory traits. They are described as egoistic, passionate, crooked, diplomatic, traitor, formal, drunkard, war monger, militaristic, wire puller, and opportunist. The 14 good traits are hospitable, idealistic, aspirant, artistic, dutiful, grave, sincere, industrious, gentle, polished, cultured, brave, smart, and literary. The first five traits selected for the whole group are diplomatic, aspirant, industrious, dutiful, and smart. It is only the British who are described as traitors and drunkards and they are egoistic, formal, and opportunist like the Americans and literary like the Indians. They are militaristic, smart, and diplomatic like the Russians and the Americans. It is interesting to note that the subjects have selected the largest number of derogatory traits (11 out of 25) for this group. The Americans come next in this regard having 10 bad traits out of 23. The average score for this group is larger than the average for any foreign group.

With regard to the British the scores of the outsiders are higher than those of the students by 11.9 per cent which again is the largest difference in the whole investigation. The outsiders might have greater contact and experiences with the British. Being older in age they might have better memories of the British who were the rulers of this country a decade back. The interesting thing is both the Americans and the British have been put almost on the same footing with regard to derogatory traits and excepting four all other traits have been the same for both the groups. In other words both the groups of subjects seem to look at Americans and British in the same way. The present international alliances might have something to do with this kind of resemblance in their attitudes towards them.

Here again both the outsiders and student group agree in stereotyping the British. The rank correlation between the two sets of scores being 0.59 is statistically significant at the one per cent level.

5. *Chinese*

The Chinese have been attributed 15 traits and they are all good qualities. It is rather surprising to find that while the subjects have selected five bad traits for their own national group, not a single derogatory trait has been selected for the Chinese. They have been described as hospitable, idealistic, aspirant, artistic, dutiful, religious, sincere, industrious, faithful, gentle, friendly, peace loving, calm, cultured, and brave. Hospitable, artistic, dutiful, cultured, religious, and aspirant are the first six qualities (the last two being bracketed) selected for the Chinese. All the good adjectives chosen for the Chinese except brave have been selected for the Indians. Chinese are religious and calm like the Indians. Both the nations are not militaristic, war mongers, diplomatic, or opportunists like the Western nations. Chinese are peace loving like the Indians and Russians. This close resemblance in having good national characteristics between these two neighbouring nations may be due to long historical association and may especially be due to the present friendly relationship; or it may be due to lack of any close touch with them. Whatever may be the reason there is no doubt that the subjects regard the Chinese with very great respect and admiration.

The average scores of the other group of subjects are among the lowest in the investigation. The average scores of the outsiders are as usual higher than those of the students by 6 per cent. Here also the rank correlation between the groups is 0.58 which is significant at the 2 per cent level.

G. CONCLUSION

It is interesting to note in this investigation that out of 30 derogatory traits given along with 30 good ones 21 traits have not been selected at all—and all these happen to be derogatory ones—for any of these groups. But the same two groups of subjects in a similar investigation (3) had selected as many as 26 derogatory traits in describing themselves as a linguistic group and six other Indian groups. All the 30 good attributes have been used fully in both the investigations. This may be due to the fact that the subjects are more familiar with the Indian groups with whom they come in close contact every day whereas they are least familiar with the foreign groups studied here. From among the four foreign groups the British obviously are better known to the subjects than any of the three other nationalities and this may be the reason why they have not only used the largest number of adjectives but also the largest number of derogatory traits in describing them. Usually a person is able to give a detailed account of a person with whom he has greater contact than of a person with whom he has very

little association. This impression may be due to the actual contact with the person having stimulus values or due to certain competition or conflict which create a mental set to perceive the imaginary stereotypes about the members of a group. It might also be due to the fact that there would be a large number of popular stereotypes accepted in common by the population for a familiar group and the individuals of the population would have a better chance to come in contact with the stereotypes rather than the members of the group. The last explanation seems to be reasonable here with regard to the British. This might explain why the subjects have selected so many traits and particularly bad ones for the British, Americans, and Indians and so few for the Russians and the Chinese. Whatever may be the reason both the groups seem to have a greater prejudice towards the British and Americans compared to the Russians and Chinese who seem to have created a much better impression on them. They have selected only two bad traits for the Russians and none at all for the Chinese. This is rather interesting.

Another interesting feature observed in this investigation is that the mean scores of the service holders have always been higher than those of the students. This indicates a general tendency in the service holders to ascribe the stereotype traits more frequently than the students. This may be due to several reasons; the service holders being more experienced in life might have been stimulated more often by these groups having social stimulus value or due to greater contact with the stereotypes themselves or due to greater frustration in life they have a greater tendency for projection and scapegoating the out-groups who are better known to them. However, nothing conclusive can be said on this issue without further investigation.

One more interesting inference can be drawn from this study. Although both the groups are two different samples having different social and economic status and age yet they agree very closely in selecting the attributes for the nationalities under study. This is very surprising indeed. It may not be very unreasonable to presume that when both the groups belonging to two different populations of the state agree so closely in their description of these five groups obviously they have drawn these attitudes from the common pool of stereotypes prevalent among the educated people. This common pool of stereotypes for the four foreign nationalities must have been derived from the popular newspapers which again are almost the same for the educated people of this state. This sort of inference stands to reason because the subjects forming both the samples have had hardly any chance to come in direct contact with the members of these foreign nationalities. So obviously the subjects have come in contact more with the stereotypes rather than the members of the group.

H. SUMMARY

The purpose of this investigation was to assess the stereotypes of 100 college freshmen and 100 service holders of Orissa towards their own nationality namely "Indian" and four other out-groups namely American, British, Russian, and Chinese. All the subjects were the genuine inhabitants of the State of Orissa (India). A list of 60 adjectives was prepared after the necessary pre-test.

The scores of the student and the service holder groups were kept separately for comparison. Attributes checked by at least 20 per cent of either group were selected for discussion in this paper. It was interesting to note that the subjects chose the largest number of derogatory traits for the Americans and the British whereas they chose only two bad traits out of 16 selected for the Russians, and not a single such trait for the Chinese for whom there were 15 good attributes. For the we-group they selected 18 good and 5 bad traits.

The rank correlation between the two sets of scores (i.e., the scores of students and service holders) in relation to these five reference groups were highly significant. This means that though the samples belonged to two dissimilar populations yet they very closely agreed in choosing the attributes for these groups. The mean scores of the service holders were higher than those of the student group in all cases. The results might suggest that the traits which had been selected by the two groups were perhaps the commonly held attributes for these groups in this region.

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NATIONAL STEREOTYPES OF UNIVERSITY STUDENTS IN EAST PAKISTAN*

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A. INTRODUCTION

The classical pattern set by Katz and Braly (1) has served as a model for a number of later studies of national stereotypes. Notwithstanding numerous studies of different group stereotypes, the central question is still the extent to which these fixed opinions are to be taken as true. Stereotypes may or may not have any basis in reality; but as Mace (2) points out, they may, in part, reflect the residual impressions of many observations. The main importance of stereotypes in determining social attitudes of a group towards another, lies in their emotional contents. Stereotypes may be understood as concrete correlates of distinctive attitudes and as such, their fixity is an index of the fixity of these attitudes.

The present paper is based on a survey of University students for their stereotypes towards nine national groups. The survey was conducted in February, 1957. A previous attempt (3) of this sort was made in Lahore, West Pakistan. This is, therefore, the first attempt in Eastern wing of Pakistan. The national groups for the study were selected with a view to their historical and political significance for Pakistan.

B. PROCEDURE

Subjects were 97 Pakistani Muslim students of the University of Dacca. The sample was randomly drawn from the Faculties of Arts and Science. Both male and female students constituted the sample. The sample included five per cent of the graduate students (105), out of which only 97 students could be contacted for the study. Median age for the group was 21.1. The subjects had adequate knowledge of the English language, this being the medium of instruction at the University level.

Each of the selected subjects was contacted individually, and requested to participate in the study anonymously. Each subject was given a cyclo-styled questionnaire to be filled in by him in accordance with the instructions thereon.

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C. THE QUESTIONNAIRE

The questionnaire consisted of two parts, *A* and *B*. Part *A* was meant to be a simple choice of qualities for each of the nine national groups. Part *B* was intended to get at a comparative evaluation of two groups so as to furnish some additional data for the study. The questionnaire read as follows:

We are interested in knowing your opinion about certain foreigners. The following words are qualities attributable to human beings in general.

Cheat, Cunning, Emotional, Intelligent, Brave, Tolerant, Faithless, Well-behaved, Honest, Sincere, Dishonest, Ill-behaved, Hardy, Friendly, Intolerant, Straightforward, Cool, Faithful, Patriotic, Conservative, Simple, Liberal, Open-minded, Superstitious, Lazy, Reserved, Religious, Hot-tempered, Coward, Proud, Democratic, Hospitable, Dull, Showy, Artistic, Aggressive, Shy, Shrewd, Generous, Selfish.

A. Please answer the following questions by putting one or more of these words against each. You can add some other qualities if those in the list do not describe the particular nationality you are writing about:

Americans are generally	Britishers are generally
French are generally	Russians are generally
Indians are generally	Turks are generally
Arabs are generally	Chinese are generally
Germans are generally	

B. Please fill up the gap in the following statements with the word or words from the above list.

Americans are generally more	than the British
Britishers are generally more	than the Germans
Germans are generally more	than the Russians
Russians are generally more	than the Americans
Britishers are generally more	than the Russians
French are generally more	than the Americans
Russians are generally more	than the French
Indians are generally more	than the Russians
Germans are generally more	than the Indians

D. RESULTS AND DISCUSSION

A picture of the stereotypes of our subjects can be had from Tables 1 and 2 which respectively show the number of subjects choosing a particular trait for each group in reply to Parts *A* and *B* of the questionnaire.

Table 3 represents the three most frequently assigned traits for each national group. This is the way Katz and Braly (1) presented the stereo-

types of their Princeton subjects. Here, as in the former study the extent of agreement for the three traits varies from group to group. Thus whereas the range of agreement of the three traits assigned most frequently to

TABLE 1
NUMBER OF SUBJECTS ASSIGNING TRAITS TO EACH NATIONAL GROUP

Traits	Americans	British	French	Russian	Indian	Turk	Arab	Chinese	German
"420" (Cheat)	11	20	—	—	26	—	—	—	—
Brave	—	—	—	—	—	62	43	—	57
Hardy	20	18	—	41	—	43	45	40	42
Cool	—	—	—	—	—	—	—	25	—
Lazy	—	—	—	—	30	—	—	—	—
Cunning	—	43	—	—	—	—	—	—	—
Tolerant	26	—	—	—	—	—	—	—	—
Sincere	28	13	—	—	—	—	—	—	—
Friendly	68	—	—	—	—	31	—	—	—
Faithful	—	—	—	—	—	—	35	—	—
Reserved	—	25	—	—	—	—	—	—	—
Proud	34	—	—	—	—	—	—	—	27
Showy	37	—	30	—	—	—	—	—	—
Shrewd	—	23	—	25	—	—	—	—	20
Emotional	—	—	27	—	48	—	—	—	—
Faithless	—	—	—	31	—	—	—	—	—
Dishonest	—	—	—	—	30	—	25	—	—
Intolerant	—	31	—	26	—	—	—	—	—
Patriotic	16	—	—	31	—	56	30	35	37
Open-minded	39	—	—	—	—	—	—	—	—
Religious	—	—	—	—	58	27	51	—	—
Democratic	39	40	—	—	—	—	—	41	—
Artistic	—	—	51	—	—	—	—	—	—
Generous	43	—	—	—	—	—	—	—	46
Intelligent	—	25	—	—	—	—	—	—	—
Well-behaved	29	—	—	—	—	—	—	—	—
Ill-behaved	11	33	—	—	—	—	—	—	—
Conservative	—	50	—	—	50	—	36	—	—
Superstitious	—	—	—	—	—	—	—	—	34
Hot-tempered	—	—	—	—	—	27	68	34	—
Hospitable	—	—	—	—	—	—	—	—	39
Aggressive	5	57	49	32	—	—	—	—	—
Selfish	—	26	—	—	—	—	—	—	—
Median	36.5	35	40.5	33	41.5	44.5	46.5	33	38.5

Americans is from 40 per cent to 70 per cent, and for the Arabs, 46 per cent to 70 per cent, the corresponding range for the Russians and Chinese is 32 to 42 and 36 to 42 per cent respectively.

The present study has followed the classical technique of determining the stereotypes (1). From the data in Table 1 we can obtain a list of traits

TABLE 2
SHOWING THE NUMBER OF SUBJECTS CHOOSING ONE NATION IN PREFERENCE TO ANOTHER
IN RESPECT OF CERTAIN TRAITS

Traits	<i>No. Preferring Americans to British</i>
Hardy	35
Sincere	25
Friendly	40
Liberal	28
Showy	30
Open-minded	36
Generous	33
Well-behaved	24
Hospitable	28
<i>No. preferring British to Germans</i>	
Coward	17
Cunning	50
Shrewd	30
Patriotic	21
Religious	25
Democratic	47
Well-behaved	27
Straightforward	52
<i>No. preferring Germans to Russians</i>	
Brave	43
Hardy	46
Proud	33
Intolerant	20
Religious	22
Intelligent	49
Hot-tempered	38
Aggressive	32
<i>No. preferring Russians to Americans</i>	
Hardy	33
Faithless	28
Intolerant	31
Intelligent	28
Aggressive	39
<i>No. preferring British to Russians</i>	
Cunning	30
Friendly	38
Shrewd	50
Religious	28
Democratic	47
Intelligent	28
Well-behaved	24
Conservative	41
Aggressive	26
<i>No. preferring French to Americans</i>	
Emotional	38
Intolerant	26
Artistic	39
Ill-behaved	25
Aggressive	41

TABLE 2 (*continued*)

Traits	<i>No. preferring Russians to French</i>
Hardy	49
Tolerant	38
Reserved	28
Shrewd	27
Faithless	31
Intelligent	35
<i>No. preferring Indians to Russians</i>	
"420" (Cheat)	28
Simple	20
Lazy	22
Coward	26
Emotional	24
Religious	35
Artistic	26
Hospitable	27
Aggressive	31
<i>No. preferring Germans to Indians</i>	
Brave	42
Hardy	38
Patriotic	31
Intelligent	35
Ill-behaved	28
Hot-tempered	23

TABLE 3
SHOWING THREE MOST FREQUENTLY ASSIGNED TRAITS

National groups	Traits
Americans	Friendly, Generous, Open-minded
British	Aggressive, Conservative, Cunning
French	Artistic, Aggressive, Showy
Russians	Hardy, Aggressive, Faithless
Indians	Religious, Superstitious, Emotional
Turks	Brave, Patriotic, Hardy
Arabs	Hospitable, Religious, Hardy
Chinese	Artistic, Hardy, Patriotic
Germans	Brave, Intelligent, Hardy

assigned by 50 per cent or more of the subjects to any national group. This would mean that all the traits assigned by 48.5 subjects of the sample to any national group reflect the stereotypes of the students. This method would not give us a full picture of the stereotypes because in certain cases only one trait falls above the 50 per cent of responses; while for some national groups no trait has been assigned by more than 50 per cent of the subjects. This has also been the reason for excluding measures of dispersion from the analysis of results. Instead, the median of the total responses for each national group has been taken as the best measure of central tendency in the

present analysis. The traits assigned by the number of subjects above the median have been taken as reflecting the stereotypes for the national group. The following stereotypes emerge from this analysis.

Americans: Friendly, showy, open-minded, democratic, generous.

British: Aggressive, conservative, democratic, cunning.

French: Aggressive, artistic.

Russians: Hardy.

Indians: Superstitious, religious, emotional.

Turks: Patriotic, brave.

Arabs: Hospitable, religious.

Chinese: Hospitable, artistic, patriotic and hardy.

Germans: Aggressive, intelligent, hardy, brave.

The analysis of Part *B* of the questionnaire provides an additional support for the above stereotypes. Though comparative in nature, the responses shown in Table 2 bring out more or less the same traits for the majority of the national groups as have appeared in response to Part *A* of the questionnaire. The following are the traits in which one national group excels another as agreed by the number of subjects above the median.

Americans more friendly, open-minded, hardy, and generous than *British*.

British more cunning, democratic, and straightforward than *Germans*.

Germans more hardy, intelligent, brave, and hot-tempered than *Russians*.

Russians more aggressive than *Americans*.

British more friendly, democratic, shrewd, and conservative than *Russians*.

French more emotional, artistic, and aggressive than *Americans*.

Russians more hardy and tolerant than *French*.

Indians more cheating, aggressive, religious, and hospitable than *Russians*.

Germans more hardy, brave, and intelligent than *Indians*.

The list of traits included in the questionnaire are divisible into three groups of Good, Bad, and Neutral traits in so far as we understand them in our daily use. These, however, were not actually divided into these categories at the time of the survey. It might have been possible to get sharply distinct responses for certain groups by thus dividing them, but in our opinion that method would not give the correct picture of the subjects' stereotypes which, we believe, has also a link with the unconscious motivations of a group and "reflect the non-logical or illogical nature of our basic values" (4). The traits have, therefore, been divided now to obtain a better picture of the stereotypes. The following is the classification.

Good Traits: Brave, Hardy, Tolerant, Sincere, Friendly, Faithful, Patriotic, Open-minded, Democratic, Artistic, Generous, Intelligent, Well-

behaved, and Hospitable.

Bad Traits: "420" (cheat), Cool, Lazy, Cunning, Proud, Showy, Emotional, Faithless, Dishonest, Intolerant, Ill-behaved, Conservative, Superstitious, Hot-tempered, Aggressive, and Selfish.

Neutral Traits: Reserved, Shrewd, and Religious.

The above classification of traits is arbitrary and gives only the popular usage of the qualities implied by them. Table 4 shows the percentage of assignment of Good, Bad, and Neutral traits to each national group. A few interesting points emerge here. The nation most favourably rated is the Turk, and the one most unfavourably rated is the Indian. This feature of the result can be interpreted in terms of our increasing alliances with

TABLE 4
SHOWING THE PERCENTAGE OF ASSIGNMENT OF GOOD, BAD, AND NEUTRAL TRAITS TO EACH NATIONAL GROUP

National group	Good	Bad	Neutral
Americans	76	24	0
British	24	64	12
French	32	68	0
Russians	39	48	13
Indians	0	76	24
Turks	89	0	11
Arabs	67	18	15
Chinese	86	14	0
Germans	60	33	7

Turkey and deteriorating relations with India during the 10 years of Pakistan's existence. Chinese are the second in line for favourable rating. This could be explained by the fact that the Chinese Premier had visited East Pakistan recently and got a rousing reception.

Table 1 shows another interesting feature of the results in that there are a few nations which get a much more frequent checking of traits than others. These are Americans and the British which clearly indicates our more frequent contacts with them and consequently a better knowledge of their habits and behaviour by our subjects.

It might be advantageous at this point to compare some of the results of the present study with those of the one done at Lahore (3). The comparison, however, is justified only in so far as both these studies were conducted in Pakistan. Briefly, the Lahore study was carried out in May, 1954, and had a larger number of subjects who were more or less heterogeneous. It consisted of four groups taken from four different colleges. The present study was carried out almost three years after and had a homogeneous

population, the University of Dacca being residential with no colleges attached to it. The Lahore study had a number of local groups who were rated along with some foreigners. There were, thus, only three groups common with the present study, although there was a great similarity in the list of traits to be assigned. Table 5 gives a comparison of stereotypes about the Americans, the British, and the Russians. It shows a very close similarity in the stereotypes about the Russians in the two studies. The Americans get a favourable rating in both the studies, whereas the British get a very different treatment by the two groups. The Dacca group is unfavourably disposed towards the British. The agreement of the two studies on their stereotypes to the Russians is significant though not surprising. The

TABLE 5
COMPARING LAHORE AND DACCA STUDIES ON THREE TRAITS MOST FREQUENTLY
ASSIGNED TO AMERICANS, BRITISH, AND THE RUSSIANS

Americans		British		Russians	
Lahore	Dacca	Lahore	Dacca	Lahore	Dacca
Hardworking Intelligent "420"	Friendly Generous Open-minded	Intelligent Clean Hardworking	Aggressive Conservative Cunning	Hardworking Cruel "420"	Hardy Aggressive Faithless

*"420" occurred in our list also. This is the number of a section in the Pakistan Criminal Procedure Code relating to cheating. We have, therefore, translated it as "cheat" in the text and also in the list given above.

disagreement of their stereotypes about the British needs some explanation. The following reasons may be given as tentative explanations:

One, a modification in the stereotypes towards the British might have occurred due to the lapse of three years between the two studies.

Two, the Suez crisis in which the British attacked a Muslim nation (Egypt) may partly explain the unfavourable stereotypes of the Dacca group. This is supported by equally unfavourable stereotypes towards the French.

Three, there are some historical reasons also for the different reactions of the two groups towards the British. The province of Bengal in British India (of which East Pakistan is a part) was always known for its nationalistic and, therefore, anti-British attitudes, partly because the British consolidated themselves first in Bengal from where they went on to extend their empire to the whole of India. On the other hand the Punjab (of which a major portion is a part of West Pakistan) has been relatively a more loyal province of British India because of its predominantly feudal social structure.

E. SUMMARY

A survey of the stereotypes about nine foreign national groups was conducted in which 97 graduate students of the Dacca University served as subjects. The survey was carried out with the help of a questionnaire prepared on the lines of the classical method of asking subjects to check adjectives which seem best to characterise a national group. The results indicated the stereotypes about the nine groups both singly and in comparison with each other. The stereotypes about the Americans, British, and Russians were compared with those of a study conducted in Lahore (West Pakistan). The differences have been explained in terms of certain historical events.

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IS THE TOLERANT PERSONALITY TYPE THE OPPOSITE OF THE INTOLERANTS?*

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A. INTRODUCTION

One of the best established and most frequently employed personality typologies is that of "high" or "low" on ethnocentrism. The basic work on the subject, *The Authoritarian Personality* (1), made the assumption that to understand the characteristics of persons who are high on ethnic prejudice, they should be contrasted with the opposite extreme, those who are lowest. The authors of this volume were aware that this assumption limited the generalization of the findings (1, 26-27), and critics suggest that there may be some characteristics in which the two opposite extreme groups on ethnocentrism (and authoritarianism) may actually resemble each other in contrast to the majority group in the middle. This raises the general question whether relationships reported in the literature between ethnocentrism and personality traits are linear, and, if not, how have the results been affected by the particular bands of the ethnocentric dimension which were used? This present paper examines the question in relation to two well-known multiphasic personality tests, the Rosenzweig Picture-Frustration Test and the Bernreuter Personality Inventory.

B. THE PROBLEM OF LINEARITY

The present writer began to suspect the linearity of the personality correlates of ethnocentrism and authoritarianism when he found that persons scoring in either of the extremes on the California *F*-Scale were poorer judges of the characteristics of others than were those scoring in the middle (16). Other studies have supported such curvilinear relationships. Haimowitz and Haimowitz (9) report that extreme groups on a social distance scale resemble each other in their degree of personal hostility as compared with an intermediate group. Taylor (17) found a similar relationship between scores on a social distance scale and the subjects' type of perceptual closure tendencies, and Dowling (3) between an attitude towards Negroes

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test and number of "nervous symptoms." As Taylor has expressed it: "extreme social attitudes are genotypically similar even when phenotypically different . . ." (17, p. 482).

Thus the hypothesis which we shall test is that tolerant and intolerant persons resemble each other on certain personality traits more than either resemble an intermediate group. This hypothesis will be tested only in respect to those variables that are measured by the Bernreuter and the Rosenzweig tests. At the same time we shall consider what light is thrown by these two tests on ethnocentrism.

C. METHOD

1. *Subjects and Procedure*

In two successive years (1954 and 1955), the Psychology I students at the University of Western Australia were given a number of tests as part of their laboratory work. These included the Rosenzweig P-F Test, the Bernreuter, and a revised version of the Bogardus Social Distance Scale. The subjects were aware that the protocols which included their names would be used for research purposes, but they did not necessarily connect these three tests with the one study.

The Bogardus was used as the measure of ethnocentrism in preference to an attitude scale such as the California *E*-Scale. It has the advantage that it possesses an inherently meaningful dimension—social distance—and also that the scores can be related to an external referent. The scale included seven ethnic groups—American Negro, Chinese, English, Irish, Italian, Jew, and Pole—on nine degrees of social distance ranging from "accept as my marriage partner" to "exclude from my country except as visitors." The subjects were divided into three groups as follows:

1. *Intolerant*—those subjects whose average acceptance of the ethnic groups was less than "to my social group as personal friends (44 per cent of all subjects fell in this group).

2. *Tolerant*—average acceptance more than "to close kinship by marriage," i.e., prepared to accept members of most of the groups as marriage partners (30 per cent).

3. *Intermediate*—all those subjects in between the above groups (26 per cent).

All of the subjects were Australian residents of European origin, and it would be reasonable to assume that well over three quarters of them were of British or Irish ancestry.

An experimental sample of 100 subjects was chosen so that each of the

TABLE 1
MEAN ROSENZWEIG SCORES FOR INTOLERANT, TOLERANT, AND INTERMEDIATE GROUP
(N = 100)

	Categories (Percentages)								Factors (Raw scores)								
	N	E	I	M	OD	ED	NP	G.C.R. %	E'	E	e	I'	I	i	M'	M	m
Intolerant	34	50.4	24.3	24.6	23.7	58.9	18.3	68.5	2.4	8.5	1.2	1.3	2.7	1.8	1.8	2.7	1.3
Intermediate	33	46.3	25.6	28.0	20.9	53.2	25.8	65.8	1.9	7.1	1.8	1.0	2.3	2.8	2.0	3.1	1.5
Tolerant	33	50.0	25.4	24.6	20.2	58.8	21.1	65.8	2.3	7.6	1.8	1.3	2.7	2.0	1.2	3.5	1.1

three groups would be represented by equal numbers (there were 34 Intolerant subjects), with approximately equal sex distribution in each group. Within these restrictions, the samples were chosen at random. Bernreuter scores were available for 90 cases only.

D. RESULTS

The mean scores for the two tests are set out in Tables 1 and 2. Inspection of the 16 Rosenzweig categories shows only one clearly linear relationship (*M* factor), compared with 11 (*E*, *M*, *ED*, *NP*, *E'*, *E* factor, *I'*, *I* factor, *i*, *M'* and *m*) that appear to be curvilinear. On the Bernreuter, only one of the six categories (*F2-S*) appears to be linear. These results confirm the hypothesis that the tolerant and intolerant subjects are not personality opposites.

TABLE 2
MEAN BERNREUTER SCORES (IN PERCENTILES) FOR INTOLERANT, TOLERANT, AND INTERMEDIATE GROUPS (N = 90)

	N	B1-N	B2-S	B3-I	B4-D	F1-C	F2-S
Intolerant	31	50	58	47	46	51	57
Intermediate	30	68	49	62	36	63	60
Tolerant	29	59	67	48	49	50	73

These findings are analysed further in Tables 3 and 4 which set out the differences between the groups in more detail by comparing the scores of each of the three groups with the other two. The scores on most of the scoring categories were not normally distributed and the chi-square test was therefore preferred to the *t* test. Two by two tables were constructed for each chi-square computation using a split approximately at the median of the total sample.

The tables present all differences that can be sustained at least at the 10 per cent level of confidence and the significant differences (5 per cent level) are asterisked. There are few differences on either of the tests between the two extreme groups, but both of these extremes differ in quite a few categories from the Intermediate group. This confirms our hypothesis that the extremes would resemble each other.

E. INTERPRETATION OF FINDINGS

1. *Bernreuter*

The results for the Intermediate group differ on this test considerably from those of the other two groups, especially from the Tolerant group. On a superficial interpretation of the results, both extreme groups of subjects are better adjusted than are the Intermediate subjects. They are lower

TABLE 3
DIRECTION OF DIFFERENCES ON ROSENZWEIG SCORES
(The group in each pair scoring higher is the one named)[†]

Categories	Intolerant v. Intermediate	Intolerant v. Tolerant	Tolerant v. Intermediate
E	Intolerant*	ND	Tolerant
I	Intermediate	ND	ND
M	Intermediate	ND	Intermediate
OD	Intolerant	Intolerant	ND
ED	Intolerant*	ND	Tolerant*
NP	Intermediate*	ND	ND
Extreme Scores [‡]	Intolerant*	ND	Tolerant*
G.C.R. %	ND	ND	ND
Factors			
E'	ND	ND	ND
E	Intolerant	ND	ND
e	Intermediate	Tolerant	ND
I'	ND	ND	ND
I	ND	ND	Intermediate*
i	Intermediate*	ND	Intermediate*
M'	ND	Intolerant	ND
M	ND	Tolerant	ND
m	ND	ND	ND

[†]Differences that are significant at the 0.05 level have been marked with an asterisk. All other tendencies referred to in this table are at the 0.10 level at least; lesser differences have been treated as no difference (ND).
[‡]Number of categories that are more than $\pm 1\sigma$ using the published norms (1949 revision).

TABLE 4
DIRECTION OF DIFFERENCES ON BERNREUTER SCORES
(The group in each pair scoring higher is the one named)[†]

Trait	Intolerant v. Intermediate	Intolerant v. Tolerant	Tolerant v. Intermediate
Neuroticism (B1-N)	Intermediate*	ND	ND
Self-sufficiency (B2-S)	ND	Tolerant*	Tolerant*
Introversion (B3-I)	Intermediate*	ND	Intermediate
Dominance (B4-D)	Intolerant*	ND	Tolerant*
Lacking Self- confidence (F1-C)	ND	ND	Intermediate*
Lacking Socia- bility (F2-S)	ND	Tolerant*	Tolerant*
Extreme Scores [‡]	ND	ND	ND

[†] and [‡] See footnotes to Table 3.

on neuroticism, introversion, feelings of inferiority, and higher on self-sufficiency and dominance. The previous literature is indefinite and inconsistent about the relationship between emotional adjustment and ethnocentrism. For example, using hospitalised patients, Levinson found some indications that the subjects obtaining the middle scores on *E* were at least as disturbed—if not more so—than the patients obtaining the extreme scores (1, p. 962). On the other hand, Dowling (3) found that middle scorers on an Attitude to Negroes scale had fewer “nervous symptoms” than did extreme scorers. Other studies which report linear correlations or direct comparisons between “highs” and “lows” (e.g., 5, 6, 7, 11, 14) report findings ranging from approximately zero correlation between ethnocentrism and adjustment to a significantly negative relationship.

Our Bernreuter findings contradict Dowling's results and also those which found a negative correlation between ethnocentrism and adjustment. The Bernreuter test, however, is easily susceptible to falsifying by intelligent subjects and in the classroom situation, ego-defensive subjects, such as our extreme groups, would probably make themselves out better adjusted than they really are. The results on the sociable scales (B2-S and F2-S) are probably more realistic; thus, the tolerant subjects are more self-sufficient and less sociable than the intolerant ones. This difference is a difference in social orientation without necessarily reflecting on the social skills of the two types, and it is consistent with the well-substantiated finding that the “highs” on prejudice are more socially dependent and conforming than the “lows” (1).

2. *Rosenzweig*

In contrast with the Bernreuter, the Rosenzweig findings with respect to emotional adjustment support the general trend of the other studies quoted. Although no direct Rosenzweig norms for adjustment as such are available, the results in three different studies suggest a typical maladjustment pattern. Persons prone to rôle-conflicts (6), minor criminals (8), and poor supervisors (15) all tend to obtain high *E* and *ED* and low *M*, *I*, and *NP*. A fourth study (4) also finds that high *E* and low *M* are signs of social maladjustment as measured by inventories. Using the opposite of these patterns as a measure of good adjustment, the best adjusted group in our present study is the Intermediate one, while the Tolerant group is slightly better than the Intolerant. The Intermediate subjects are oriented towards goal achievement (*NP*) rather than to the defense of their egos (*ED*) and they are more inclined to “evade or deny their aggression” (*M*)² than to “turn

²The descriptions given of scoring categories represent paraphrasing of the descriptions given in the test manual.

it onto the environment" (E). On the minor scoring categories, the intermediate subjects are higher than the extreme subjects on "offering amends to solve the problem" (i) or "minimizing obstacles to the point of denying their presence" (M'). They are less inclined to "point out the presence of the frustrating object" (E'). They also give more varied types of responses than the extreme subjects, with more combination scores, and fewer total scores in the extremes on any of the categories.

The only other studies which we could locate that investigated the relationship between ethnocentrism and the Rosenzweig (7, 10) contrasted the two extreme groups only and found no significant differences between them. On the major Rosenzweig categories our findings confirm these other studies, although there is a significant difference in favor of the Tolerant group on the minor scoring category M factor which represents "evasion of blame altogether, the situation being regarded as unavoidable." One suggestive tendency which was present also in Gough's study (7) is the intolerant subjects' high scores on concern with obstacles or barriers (OD). This is consistent with other findings (e.g., 1, 12) that intolerant persons tend to perceive the external environment as dangerous and threatening. These intolerant subjects are more likely than the other subjects to "turn the blame against some person or thing in the environment" (E factor) than to look to "someone else for a solution to the frustrating situation" (e).

The direction of aggression is interesting. From the results of the California study (1) Frenkel Brunswik considers that an extrapunitive attitude is more typical of the "highs," and an impunitive attitude of the "lows" (significant for males, not for females). This same trend receives support in other studies (5, 6, 7, 12, 13), but in our present study it occurred only with regard to the Intermediate group versus the extremes. High M and low E is typical of this Intermediate group. None of the previously mentioned studies, including our own, lends any convincing support to the argument made in (1) that exaggerated self-blame (intropunitiveness) is characteristic of those low on prejudice. The 10 subjects in our study who recorded very high I scores were not typical of any group on ethnocentrism.

In summary, there appear to be three personality types associated with ethnocentrism. These types probably correspond with Siegel's groups (14) descriptively titled *prejudice prone*, *prejudice resistant*, and *intermediate*. Further work on prejudice should take this into account, and the intensive personality studies that have been applied to the two extreme groups should be extended to the intermediate group.

F. SUMMARY

Although most of the work on the relationship between ethnic tolerance and personality has been based on a comparison between the extremely tolerant and extremely intolerant, there is previous evidence that some of the relationships are not linear. To investigate this relationship further a study was made of 100 subjects, made up of persons judged to be tolerant, intolerant, or intermediate on a social distance scale. A comparison of the Rosenzweig and Bernreuter test results of these three groups suggests that the intolerant resembles the tolerant group in most respects by contrast with the intermediate group. We conclude that there are at least three different personality patterns associated with the ethnic tolerance-intolerance continuum. These are:

(a) *Intolerant subjects.* These perceived themselves as well adjusted on the Bernreuter, but the Rosenzweig results suggest that they are not. They are pessimistic and are more concerned with the obstacles that cause frustration than they are with the solution of the problems. They are ego-defensive and extrapunitive rather than impunitive.

(b) *Tolerant subjects.* These resemble the above group in many ways. They perceive themselves as well adjusted, but unlike the intolerant subjects they consider themselves to be self-sufficient and unsociable. Their Rosenzweig results also suggest that they are not as well adjusted as they make out in their inventory responses. They are aggressive towards others and they expect them to provide the solution to problems, but they do not dwell on the frustrating obstacles. They are as ego-defensive as the intolerant group, but more forgiving.

(c) *Intermediate subjects.* These probably have the best adjusted personalities although they describe themselves as somewhat emotional and submissive. They are goal-directed rather than ego-defensive in a frustrating situation, and they are impunitive rather than extrapunitive. They play down frustrating situations or expect to solve them through their own efforts. This group seems to be less aggressive and more balanced than the others.

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BOOKS

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REVIEWED BY HENRY WINTHROP

The psychologist, more than any other craft member of the behavioral sciences guild, is likely to hold an oversimplified view of those human problems to which his discipline is contributory, together with an exaggerated idea of the efficacy of his discipline, alone, for dealing with these. This optimism has several root causes, but there are at least two reasons for his professional myopia which are worthy of our attention. First, there is the occupational disease of selecting small comfortable problems to work on with relatively few variables to manipulate. Second, there is a lack of familiarity with the sociology of knowledge, particularly in relation to his specialty, so that the psychologist is frequently unaware of the limitations of his methods and his findings and remains a stranger to those social factors which have conditioned his emphases, methods, enthusiasms, and doctrinal monisms. This "specialty blindness" may be somewhat more intense for psychologists only because the discipline they cultivate is supposed to deal more directly, profoundly, and extensively with human behavior than any of the other behavioral and social sciences. All specialization, however, whether it be that of the psychologist or of workers in other areas, has received a good deal of drubbing over the last two or three decades. Only in recent years has a more constructive attitude been followed so that a few voices

have made themselves heard along interdisciplinary lines, chiefly via the newer journals. Even fewer voices have called for the integration of all human studies involving the physical and behavioral sciences *as well as the traditional humanities*, in order to understand the human condition. Kahler (7) who is only one of several voices pleading for intellectual unification in the vineyard of scholarship and who insists that there is a place for the scholar and scientist who wishes to specialize, so to speak, in general outlook, has called for an Institute for the Integration of Studies which would have three basic tasks. These will be mentioned briefly at this point.

First, Kahler calls for the clarification and coördination of fundamentals, a task whose essential objective will be to formulate a common, coherent language for the concepts of all the sciences to aid interdisciplinary communication. To the best of this writer's knowledge nothing has as yet been done in this direction. Second, he asks for the "study of the convergences and correspondences in the findings of different disciplines, and evaluation of the findings of any one discipline with regard to their implications for other disciplines." This, of course, is essentially the task of General Systems Theory, although it has also been demonstrated on a much less ambitious scale in Gillin's (5) efforts to bring together convergences in anthropology, psychology, and sociology. Last, Kahler pleads for the justice of H. A. Murray's (14) "strategic hypothesis" which is aimed at discouraging useless, or at least, insignificant work in psychology, sociology, and in other behavioral areas. Kahler quotes Murray in this connection as follows.

If we are devoted to humanity it is imperative that we apply, as physicians do, whatever wisdom, knowledge and skills we have or can acquire to the task of . . . checking, if not curing, the present ominous epidemic of antagonisms. Consequently for our time, a strategic hypothesis might well be defined as one which is strategic not only in respect to the advancement of knowledge and theory, but in respect to the advancement of fellowship, social integration, and ideological synthesis (p. 266).

This type of integration is well exemplified by the work of Borsodi (2), which, however, is somewhat off the beaten path of professionalism. There are, however, other senses of the word "integration," which are also important. We require *integration by composition* in which the findings of the different behavioral sciences are set forth in such fashion that an active knowledge of the subject is accompanied by the ability to see it from the special viewpoint of the remaining behavioral disciplines. To such an interpenetration of themes is brought at the same time a value orientation with-

out, however, failing to distinguish fact from value at all times. Finally we also need *integration by amalgamation* which covers every type of relevance a theory has for a set of facts, every type of effort which relates one set of facts to another, and every effort to show the bearing of research findings to their possible applications and uses in everyday life.¹

The Fabric of Society is predominantly an example of integration by composition mixed to some extent with integration by amalgamation, a fusion whose need has been recognized and pleaded for frequently by others. In a volume of 55 chapters, subsumed under four parts, and pages of double column format, the authors have unfolded the social sciences with a panoramic sweep. Part I, Persons, Groups and Culture, covers broadly academic psychology and psychoanalysis in relation to personality theory, formation and research, on the one hand, and normal and abnormal behavior, on the other. The major portion, however, of Part I deals with sociology and to a very minor extent, anthropology, winding up with an extensive analysis of popular culture, which appeared previously in a well known symposium volume on mass culture by Rosenberg and White (19). Part II, Science and Symbols, knits together a series of contributions to logic and scientific method, philosophical analysis and interpretation, by the sociology of knowledge, the impact of science on society, the philosophical, moral, and value problems generated by science, the field of communication and symbolic behavior in relation to social phenomena, and the social rôles of artistic and religious experience. Part III, The Economic Aspects of Society, covers the entire field of economics in terms of its leading subsidiary disciplines, an examination of the Soviet economy and Marxism, and a chapter on demography. Part IV, bearing the rubric, The Organization of Power, deals broadly with political science, international diplomacy, power politics, a thorough examination of the democratic philosophy of government, a study of voting behavior, and a terminal examination of culture and civilization in relation to personal development and maturity.

Where do the major values of a book such as this lie for behavioral scientists in general and psychologists in particular?²

¹There are, of course, other modes of intellectual integration possible in scholarship today. "Management Science," which is in a state of flux, is trying to achieve through training a unity among such disciplines as the basic sciences, engineering, the behavioral and social sciences, the newer disciplines of operations research, linear programming, queueing, game and information theory, decision theory, the theory of organization, and various branches of statistics, such as quality control. It is impossible at this time to foresee the results of such experiments in intellectual integration.

²In concentrating on the features of this volume which are of predominant interest to psychologists, no slight is intended for the work done by the authors of

For all behavioral scientists the book possesses the following assets. (a) The authors have succeeded in showing that human behavior has many aspects and that in order to comprehend it, those of us concerned with the human condition must take behavior into account from all these aspects. The inescapable conclusion is that if specialists do not start employing multidisciplinary approaches they will develop theories whose narrowness will be intellectually out of focus with the true complexity of the phenomena in which they are interested. (b) Pedagogically the authors have demonstrated, at least for this reader, that, both for students and an intelligent lay public, an interest can be aroused in the social studies not only by showing their interconnections but also by demonstrating the applicability of the leading ideas of the separate disciplines to the global behavior and social phenomena of everyday familiarity to the reader. (c) The authors have avoided the usual fulminations against the myopia of specialization and have exhibited directly by their work the type of synthesis needed. One good integration is worth 20 fulminations and the insipid simplicities which are liable to be generated by specialization pale before the full-bodied syntheses presented by the authors. (d) The remarriage of the humanities with the academic disciplines, following a wasteful, interlocutory period during which some healthy, intellectual progeny might have been raised, has been attempted by the authors in a way which restores an organic view of man. Such an objective has been most cultivated in antiquity although doggedly re-emphasized by many current figures. (e) The authors have had the courage to declare that, although value judgments must be distinguished from hypothesis and fact, they *must be intermingled with them*, if we are serious about answering Lynd's (11) question "Knowledge For What?" The true value of knowledge is not power, as Lenin thought, or consumption, as we think today. Its value lies in the states of mind to which it leads and the serious and mature social scientist must begin to see the wisdom of the Hellenic conviction so aptly described by Bell (1) that we must have Reason, sweetened by a sense of values and a sense of values hardened and pointed by Reason. For Reason modern man must substitute the logico-empirical tradition and for values, perhaps, the word "wisdom." This conviction can perhaps best be put in the authors' own words.

The Fabric of Society on the remaining behavioral sciences. This is particularly true of the field of economics the quality of whose treatment throughout this volume is very high, original, extremely interesting, and pedagogically most unusual. We must, of necessity, single out the material of direct interest to psychologists. Any imbalance of emphasis or outright neglect is therefore strictly a professional necessity and nothing more.

Not to distinguish what must always be opinion from what is objective and factual would be confusing. Yet it is one thing to distinguish, quite another thing to omit value judgments. To abstain from presenting and discussing value judgments would be to divide the minds of men into two wholly separate parts. In one part, orderly crops of factual and logical judgments are scientifically raised; in the other, a jungle of wild opinions and unscrutinized experiences thrives untended. This might bring the very calamity feared by those who advocate the presentation of only what is scientifically knowable; some ferocious and undomesticated beast might break out from the uncultivated part of the mind to ruin the orderly crops planted in the other. For to disregard what cannot be proved is to omit it from discussion but not from experience. Indeed, the greater part of human experience would be excluded from articulate reflection. To discuss only what is scientifically testable would mean to ignore much that is vital and to lay undue stress on the trivial. Rather than give importance to things that are unquestioned, we have tried to discuss things that are important.

(f) The volume gives expression to the conviction that a true ivory-tower attitude is to refuse to take a stand on human issues where our knowledge is limited. Since this must always be the case, we must take sides in terms of our limited knowledge, otherwise we encourage that alienation between learning and behavior which is academically approved by the injunction to avoid being "tendencious," an outlook that was effectively satirized by Hogben (6). Finally (g) the authors have stressed the need for theory, its distinction from fact, its synonymy with "social interpretation" as well as with the formal structure of science, and the folly of all radical empiricisms in the behavioral sciences, an outlook so characteristic of ideophobes.

Of more concern is the question of the value which *The Fabric of Society* possesses directly for psychologists. Among its assets in this connection, though not exhausting them by any means, are the following. (a) Psychological theory and findings have been related to our contemporary problems of alienation and anomie where both of these appear to be substantially connected with our modern consumption spree and jockeying for power. (b) The authors have treated individual confusions concerning personal identity and various types of social friction as being rooted in middle-class accentuation of rôle-playing. (c) Certain themes in the social psychology of American life, such as our attitudes to work and leisure time, have been related to the spiritually dysgenic qualities of popular culture. (d) The authors have furnished an extensive account of the relationship of psychoanalysis and clinical and academic psychology, to personality and child development, relating these disciplines, wherever possible, to moral and philosophical issues.

(e) The volume does an outstanding job of relating contemporary interest in communication, language, and symbol-using behavior to moral issues, value problems and processes of socialization, instead of discussing these as though they were matters of isolated interest to the specialist. (f) The psychological roots of religion, as expressed in ritual, symbol, charisma, and numen, have been sympathetically explored in a way that should not only make more academic psychologists interested in fuller studies in this area but should also serve to dissipate the uninformed and prejudiced conviction that religion is concerned with superstition and the accidents of provincialism. (g) In dealing with the social function of art the authors have related art to social perception, to the expressive rather than the ratiocinative function of language, and to symbol formation and social pathology, opening up future vistas for professional research and exploration. At the same time the authors have shown by the example of their own work how little of the social or individual psychology of artistic endeavor will ever be understood without amalgamating the viewpoint of psychological with other disciplinary perspectives. (h) For many psychologists the mind-body problem is tied up with questions of free will and determinism. The authors have presented a discussion of the problem in Chapter 23, which will serve to point up the blather-skite which usually accompanies discussion of this problem. (i) The authors have produced some interesting discussion on the lag between scientific discovery and the transformations in social psychology which it should entail. They have also furnished some penetrating considerations concerning the *psychological* impact of science, technology, and the scientific outlook on the social scientist, an impact which may have a bearing on future research in the social studies.

At this point it will be of value to the psychologist to furnish two illustrations, one of integration by amalgamation, the other of integration by composition.³ These are taken from areas of professional familiarity and are therefore more to the point. Our first illustration is to note that research on the Zeigarnik effect indicates that unfinished business is accompanied by tension. Many industrial psychologists have sought to explain anomie and alienation in the work situation by referring its incidence to tasks which are of interest to the worker, which have been interrupted. These incompleting tasks, retained in memory, are thought to germinate the tension which, if classified by its source, is then designated as anomie or alienation. The im-

³These examples are furnished by the present reviewer. They are not to be found in *The Fabric of Society* although they are in line with the spirit of integration to be found in that volume.

plication here, of course, is that we have an example of the Zeigarnik effect in a real-life, industrial situation rather than in an experimental setting. This explanation, of course, will not hold for workers engaged on tasks devoid of meaning or of ego-involvement and will not hold for workers incapable of grasping the internal structure of a task and the way in which its parts are related to the whole. A competing Gestalt viewpoint, put forward by Pelizzi (17), regards anomie and work alienation as being associated with the human capacity to form concepts. "The work tension is then regarded as arising from any occupation which systematically frustrates this capacity to form conceptual, meaningful wholes. As a result the work does not appear to constitute significant behavior. Both explanations are examples of the application of one set of findings from social psychology (or experimental, depending upon the taxonomy employed) to another set of findings from industrial psychology and this is one mode of integration by amalgamation. Our second illustration, exemplifying integration by composition, is represented by the considerations underlying the establishment of a discipline known as economic psychology. These have been set forth by Katona (9). He has attempted to show that Gestalt psychology and field psychology will illuminate consumer behavior, decision making by businessmen, and behavior on the part of consumer, businessmen, and policy makers, which contributes to economic fluctuations. Economic behavior, Katona has shown, is better understood when seen from the vantage point of level of aspiration, motivation research, and topological psychology. As a matter of fact, says Katona, psychological viewpoints have been used "in studying communication between economic groups, in manipulating social behavior housing projects and, above all, in investigating management-employee relations and the factors conducive to increased coherence, morale, and productivity of small work groups." One excellent example of the interpretation of business and economic behavior in terms of motivational concepts may be seen in the papers contributed to the Proceedings of the Third Annual Seminar On Social Science For Industry (18). The point, however, of our two illustrations is to emphasize the fact that the spirit of integration by composition and amalgamation, which these examples represent, are commonplace features of the exposition of the behavioral sciences in *The Fabric of Society*.

The preceding examples make clear in a general fashion, without resorting to material from *The Fabric of Society*, itself, the quality of creative integration which suffuses the treatment of so many of the topical objectives taken up by the authors. An example of this type of integration, however, taken directly from the volume, would be even more appropriate at this point. The ex-

ample selected and reproduced below is neither the most brilliant nor the most mediocre that could be furnished from the volume, but it is definitely representative. It is taken from Van Den Haag's brilliant chapter on popular culture. It has been selected because it illustrates the manner in which a point of view borrowed from psychoanalysis is made to permeate a discussion of the relationship between diversion, art, and boredom, thus conveying the sense of integration by composition, which we have stressed. The selection follows.

Repression and Discontent

The gist of any culture is an ethos which gives meaning to the lives of those who dwell in it. If this be the purport of popular culture, it is foiled. We have suggested how it comes to grief in various aspects. What makes popular culture as a whole so disconcerting is best set forth now by exploring the relationship among diversion, art, and boredom.

Freud thought of art as a diversion, "an illusion in contrast to reality," a "substitute gratification" like a dream. In this he fully shared what was and still is the popular view of art. It is a correct view—of popular "art," of pseudo-art produced to meet the demand for diversion. But it is a mistaken, reductive definition of art.

Freud finds the "dreamwork" attempting to hide or disguise the dreamer's true wishes and fears so that they may not alarm his consciousness. The "substitute gratification" produced by the dreamwork, mainly by displacements, helps the dreamer continue sleeping. However, one major function of art is precisely to undo this dreamwork, to see through disguises, to reveal to our consciousness the true nature of our wishes and fears. The dreamwork covers, to protect sleep. Art discovers and attempts to awaken the sleeper. Whereas the dreamwork tries to aid repression, the work of art intensifies and deepens perception and experience of the world and of the self. It attempts to pluck the heart of the mystery, to show where "the action lies in its true nature."

Though dreams and art both may disregard literal reality, they do so to answer opposite needs. The dream may ignore reality to keep the sleeper's eyes closed. Art transcends immediate reality to encompass wider views, penetrate into deeper experience, and lead to a fuller confrontation of man's predicament. The dreamwork even tries to cover upsetting basic impulses with harmless immediate reality. Art, in contrast, ignores the immediate only to uncover the essential. Artistic revelation need not be concerned with *outer* or with social reality. It may be purely aesthetic. But it can never be an illusion if it is art. Far from distracting from reality, art is a form of reality which strips life of the fortuitous to lay bare its essentials and permit us to experience them.

In popular culture, however, "art" is all that Freud said art is, and no more. Like the dreamwork, popular culture distorts human experi-

ence to draw "substitute gratifications" or reassurances from it. Like the dreamwork it presents "an illusion in contrast to reality." For this reason, popular "art" falls short of satisfaction. And all of popular culture leaves one vaguely discontented because, like popular art, it is only a "substitute gratification"; like a dream, it distracts from life and from real gratification.

Substitute gratifications are uneconomic, as Freud often stressed. They do not, in the end, gratify as much, and they cost more psychologically than the real gratification which they shut out. That is why sublimation and realistic control are to be preferred to substitution and repression. This is why reality is to be preferred to illusion, full experience to symptomatic displacements and defense mechanisms. Yet substitute gratifications habitually resorted to incapacitate the individual for real ones. In part, they cause or strengthen internalized hindrances to real and gratifying experience; in part they are longed for because internal barriers have already blocked real gratification of the original impulses.

Though the specific rôle it plays varies with the influence of other formative factors in the life of each individual, popular culture must be counted among the baffling variety of causes and effects of defense mechanisms and repressions. It may do much damage, or none at all, or be the only relief possible, however deficient. But when popular culture plays a major rôle in life, significant repressions have taken (or are taking) place. Popular culture supplants those gratifications which are no longer sought because of the repression of the original impulses. But it is a substitute and spurious. It founders and cannot succeed because neither desire nor gratification are true. "Nought's had, all's spent. Where desire is got without content."

It may seem paradoxical to describe popular culture in terms of repression. Far from repressed, it strikes one as uninhibited. Yet the seeming paradox disappears if we assume that the uproarious din, the raucous noise, and the shouting are attempts to drown the shriek of unused capacities, of repressed individuality, as it is bent into futility (pp. 187-8).

Consider some of the advantages of the mode of exposition used in *The Fabric of Society*, that is, the methods of integration by composition and amalgamation. This mode of exposition focuses attention upon important areas of research containing problems which are hybrid to several of the traditional disciplines and which might otherwise be missed. Consider the neglected social psychology of administrative bureaucracy. Do governmental and industrial administrators possess attitudes and values which augur a coming totalitarianism—or not? This should be one of the most important chapters in a social psychology of decision-making. Such a social psychology could serve as a check upon such theories as those of Neumann (15) and

Burnham (4), that the concentration of economic power and the bureaucratization of industry will lead to totalitarianism, or as a check upon Brady's (3) theory that the trade association is a pre-Fascist power system. Consider the theory of Mills (13) that the new power elite, consisting of figures in the economic, the political, and the military domains, are the new decision makers. The techniques of the social survey and the public opinion poll are available to check on the extent to which the voting behavior of the electorate swings with changes in the opinions and decisions of these new elite groups. The same techniques as well as others, such as the use of the panel and the content analysis of official speeches, are available for checking on whether, in fact, there is uniformity in attitude among these groups. Let us move to other areas. What is to prevent the social psychologist interested in game theory from applying it to the phenomena and problems of international politics in line with the considerations outlined by Kaplan? (8). To what extent is rôle-playing a cover for individual insecurity? To what extent is status-striving the direct accompaniment of being "beside one's self," that is, evidence of what Ortega y Gasset (16) calls "alteracion," an absence of a firm sense of self-identity? Dozens of neglected problems which cut across two or more of the behavioral sciences and which are not so easily seen except as these are approached integratively in the manner of *The Fabric of Society*, would be, in a sense, "sitting ducks" for the procedures of the professional psychologist.

Why then are problems of this hybrid type relatively neglected by psychologists? For one thing the average psychologist has little interest in these behavioral sciences somewhat remote from his own. At best he maintains a peripheral interest in sociology and anthropology but changes in the mores of business administration and management, research in political science and demography, theologically dominated writing such as that of Tillich (22) and interpretations of American culture and civilization such as that of Lerner (10), are likely to be more marginal to his interest. What is even worse they are also likely to be thought to be highly irrelevant. As a derivative of such indifference he is likely to be ignorant of some of the most heuristic, social hypotheses in these areas, hypotheses loaded with suggestiveness for direct research in social psychology. Then again the average social psychologist is somewhat timid about asserting his rôle and possible contribution to the forward areas of research in other fields. Finally, and this is the unkindest cut of all, psychologists are indifferent to considerations of *value* and *morality*, which underlie the question of what should be the most appropriate form or forms of the human community. This, of course,

is one of the grand questions which have been asked continually and answered intermittently from time to time, beginning with Plato. This sin of indifference is, of course, growing, and reaching peak points more in the attitudes of physical scientists than of social scientists as Speyer (20) has shown. However, its origin, as we all know, lies in an effort to adopt the outlook which has been so successful for the physical sciences. This outlook has been an article of scientific faith for a long time now. It is becoming increasingly outmoded and the reasons why it appears to be anachronistic have been set forth not only in *The Fabric of Society*, to some extent, but even more so in a large body of literature in and out of the social sciences. Since this is not the place to enter into a discussion of that literature we will simply by-pass it completely. The counter-sin, of course, to this indifference to problems of value and morality in social and behavioral research, in an uncritical, radical empiricism which mistakenly believes that the behavioral scientist can operate in a value-free context, merely because he so frequently does not make his operating values explicit, and which, at the same time, proceeds on the sophomoric conviction, with Dragnet doggedness, as it were, that it wants the facts and nothing but the facts. This uncritical worship of fact and datum, which is part and parcel of the American cultural ethos, and which shrinks from such questions as "Knowledge For What?", has been brilliantly examined and intellectually evaluated by Macdonald (12). A reading of Macdonald's thesis will make an excellent intellectual catharsis for those behavioral scientists still laboring under the conviction that social science must be value-free. This demand was socially conditioned by the need to free science from the shackles of theological domination. This historical accident should not be allowed to dominate the selection and use of research in the decades to come.

It is interesting to compare the discussion of authority, a subject which receives full-bodied treatment in Chapter 8 of *The Fabric of Society*, with the treatment of the same subject in terms of a philosophical analysis, as we get it from the British philosopher, Weldon (23). Our authors make a distinction between personal authority or leadership, on the one hand, and the vested authority of office on the other. The treatment given in the present volume enables the reader to see the interrelationships as well as the conflict between these two types of authority, in terms the social psychologist can understand. In addition it highlights the association of authority with social symbols and its possible relationships to power. On the other hand, Weldon (23), analyzing the term, "authority" in relation to the term, "power," and limiting the analysis more to syntactical considerations rather than to

matters of psychological observation and historical record, sees confusion concerning the "meaning" of power as due to the unnecessary difficulty which "has arisen because their logical grammar has been commonly misconstrued." A social psychologist will, of course, feel that more understanding can be obtained by observing the *phenomenal context in which we employ this term* than in examining the vagaries of meaning in the term, itself. As a result our authors and Weldon (23) can arrive at contrasting conclusions, the former declaring that power "is as often a cause as it is an effect of authority," the latter asserting that "it is misleading to suppose that the possession of authority adds something to the exercise of power or the employment of force. It is rather the case that force exercised or capable of being exercised with the general approval of those concerned is what is normally meant by authority. . . ." The contrast between the interpretive approach, tempered by matters of social psychology and historical record, and the skeletalized concern with the logical syntax of the term rather than its semantic referent, sharpens more forcefully for the professional reader⁴ the fact that intellectual integration continuously employed can frequently be more informative and freer of contradictory tendencies and rootless discussion than the narrow approach of minute syntactical analysis, regardless of what merit this latter method may show in other contexts.

Some unusually well-treated topics occurring in Part I, which will be of paramount interest to social psychologists, are the following: a discussion of superiority feelings in national and racial groups, highlighted by some interesting excerpts from commentators on the subject; a description of culture in relation to the formation of personality and character, and its binding effect on personal integration; a treatment of the relationships among personal disintegration, economic progress and social stability; a first-class, imaginative discussion of social mobility, a subject on which no social psychologist should be ignorant because of our tendency to borrow attitudes and tastes from alien class contexts in order to bolster up unrealistic self-images; an extended discussion of status and rôle and problems associated with these, which will illuminate very succinctly, for instance, the discussion of such topics in Sherif (20) as "human interaction and its products" and "man and products of his interactions," and will help the average social psychologist

⁴It should be made clear that *The Fabric of Society* is written for the *non-professional reader*, that is, the student and intelligent layman. For these it performs a signal service of orientation and interest. However, its integrative methods are clearly of such distinct value to the professional psychologist not greatly enthusiastic over interdisciplinary approaches, that we have chosen to emphasize the possible reactions of the professional reader, throughout our discussion.

realize that an informed, humanistic, and imaginative treatment of certain topics in sociology should be part and parcel of the intellectual baggage one requires professionally; and finally, still referring to Part I, any social psychologist who neglects to read so brilliant an essay as the one on popular culture, will miss a rare treat. A reading of this essay will render conspicuous the difference between a social psychology permeated with a humanistic touch and dominated by a sense of value and relation, and a social psychology which plays it safe by an unimaginative addiction to facts left unrelated to other disciplines, to conflicting values and to the human condition, preferring, instead, to be boxed up in a professional journal and free forever of tendentiousness. In Part II the social psychologist, interested in the nature of stereotypes, will find a discussion of the self-fulfilling prophecy with respect to social prejudice, which is a must for reading purposes. In Part II likewise, the authors have furnished a discussion of science, morals, and values, and of science and free will, which will be an eye-opener to those psychologists who regularly discuss the question of determinism and free will in human behavior, in the classroom, whenever it is brought up, and do so without any philosophic underpinning, without any intellectual subtlety and with a wooden, mechanical materialism which is an oversimplified hang-over from Lamettrie and Holbach, without their even being aware of it. From Part IV those psychologists interested in *SPSSI's* work, will find much of value and penetration in the discussion of war and peace, while those psychologists interested in the factors which make for international misunderstanding⁵ and who wish to lessen it in the years ahead, will find the viewpoint of Chapter 45 on Foreign Policy extremely relevant to the achievement of balance and perspective in this area. For those social psychologists with an active interest in public opinion, voting behavior, and mass communication of the Nu-Speak variety, the analysis by Ross of the democratic doctrine and his presentation of such topics as political parties, the vote, power-seeking groups and bureaucracy, will furnish a means of knitting together the findings of the detailed studies in this direction, with which they are already familiar.

We must finally turn to an evaluation of *The Fabric of Society*. It is difficult to undertake this task without lapsing into superlatives, for the present writer considers the book a contemporary classic, which should be read by generations of students. At last it is possible to teach, without apol-

⁵As an educational experience in contrasts, this writer recommends a joint reading of Chapter 45 and the publication entitled "Psychological Approaches to Inter-group and International Understanding." A symposium of the Third Inter-American Congress of Psychology. (Gilbert, G. M., ed.). Hogg Foundation For Mental Hygiene. Austin: University of Texas, 1956.

ogy, an integrated social science course of the sort every student should take. This volume may, indeed, be a preview of what is to come from what has been called *specialization of general outlook* in the behavioral and social sciences. Such specialization may prove to be indispensable if these sciences are to be worth their salt and contribute meaningfully to an understanding of the human condition and the reduction of individual and social pathology. Nor is such specialization easy. Few of the authors' friends granted the possibility that a book of this sort could be done. The volume, years in the making, exhibits essentiality of choice and simplicity of presentation, without loss of what might be called "the accuracy of first approximation." The entire volume has been written with a blend of humanistic, literary, philosophical, and scientific understanding, but without neglecting the *richness of content, proper*, from the social sciences, themselves, which latter, of course, is the *sine qua non* for a program of the sort that the authors have tried to carry out.

The treatment throughout is penetrating and interpretive and, to the best of this writer's knowledge, involves a blend and approach which is not to be found in any other volume which aims at similar scope. It also distinguishes fruitfully between science as a method of inquiry and science as a cultural force. In Ross' own words: "The former yields knowledge. The latter may habituate people to particular attitudes and limit the range of their imagination and sympathy." This is precisely the kind of comment which any specialist should take seriously, and the ideologue, doctrinaire, and radical empiricist in the behavioral sciences even more so. If we wanted to fit *The Fabric of Society* into a traditional, recognizable mold, we would describe the authors' skills and range of information as a mixture of erudition from the social sciences with the temper of social philosophy, presented interpretively without loss of accuracy either in information or the exposition of technical concepts. However, there is one major sour note on which our remarks must turn if an important liability in this volume is not to be overlooked in striking up a balance sheet. For a volume concerned with integration by composition and amalgamation in the social sciences, some place should have been reserved for discussion of such topics as management science, the social psychology of industry, the science and art of administration, the theory of organization, the impact of automation, cybernetics, linear programming, operations research, information, game and decision theory, and similar recent developments. The omission of these considerations may have been prompted by the level of treatment it may have been thought they deserved and the fact that, although the work is a high-level, intelligent, and inter-

pretive survey, it was nevertheless meant to be only introductory to the social sciences. The importance of these new developments, however, is unmistakable, and in one way or another they should form a proper part of any omnibus orientation *at any level*.

The over-all effect of *The Fabric of Society* upon the reader is that of a description of important avenues of activity in the behavioral and social sciences, executed with *understanding* rather than in the spirit of a *cataloguing* of topics, which is so standard a treatment for the survey. Throughout it is evident that the authors look for cultural and personal meaning with an intellectual third ear, as it were. Of one thing the reader can be certain. The complexity of human relationships and the human predicament will be keenly appreciated in reading this volume and with this appreciation the specialist should achieve a more modest viewpoint, a modulated "imperialism of specialty" and a less strained partisanship. The intelligent layman, uncorrupted by intellectual partisanship, will likewise find this volume richly rewarding. He will find that it leaves him with a feeling that human behavior has been examined realistically from all sides, free of any atmosphere of artificiality of discussion or example. The topics converge and strike home so that, to paraphrase a well-known expression, one "can see man steadily and see him whole." There may have been more under Heaven and earth than Horatio ever dreamed of in his philosophy. More important still, there is more in the study of man than most of our specialties vouchsafe a glimpse of. Advancement in understanding may come with a sense of this human totality. It surely will not be conferred by a passion for intellectual "tunnel blindness."

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